



Environment

Submitted to:
Encana Oil & Gas (USA) Inc.
Denver, Colorado

Submitted by:
AECOM
Fort Collins, Colorado
60221849.700
February 2012

Pavillion Natural Gas Field, Fremont County, Wyoming, Encana Oil & Gas (USA) Inc.

2011 Pit Investigation Report – Pavillion Fee 14-12



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List of Acronyms

AECOM	AECOM Technical Services, Inc.
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DRO	diesel range organics
ENCANA	Encana Oil & Gas (USA) Inc.
ESC	Environmental Science Corporation
GRO	gasoline range organics
IME	Inberg Miller Engineers
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
OCSRRS	Oil Contaminated Soil Remediation Ranking System
PF 14-12	Pavillion Fee 14-12
PID	photoionization detector
PVC	polyvinyl chloride
ppm	parts per million
SVOC	semi-volatile organic compounds
TPH	total petroleum hydrocarbon
USEPA	U.S. Environmental Protection Agency
WDEQ/SHWD	Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division
WOGCC	Wyoming Oil and Gas Conservation Commission

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1.0 Introduction

This investigation report has been prepared by AECOM Technical Services, Inc. (AECOM) on behalf of Encana Oil & Gas (USA) Inc. (Encana). The purpose of this report is to summarize the results of the site investigation activities performed at the Pavillion Fee 14-12 (PF 14-12) pit location within the Pavillion Natural Gas Field east of the town of Pavillion, Fremont County, Wyoming (see **Figure 1-1** for a site location map). The work activities completed at the pit site were detailed in the August 18, 2011 *Draft Pavillion Natural Gas Field, Fremont County, Wyoming, Field Work Plan for Site Investigations – August and September 2011* (AECOM 2011) (work plan).

The PF 14-12 site was previously investigated in June 2006. In March 2008, remediation activities involving the removal of approximately 200 cubic yards of soil were performed. Soil removal was conducted based on comparison of soil sample results to the cleanup guideline, determined by the Wyoming Oil and Gas Conservation Commission (WOGCC) "Guideline for Closure of Unlined Production Pits" Oil Contaminated Soil Remediation Ranking System (OCSRRS). The maximum total petroleum hydrocarbon (TPH) of the excavation confirmation soil samples collected in 2008 was below 4,000 milligrams per kilogram (mg/kg) which was the cleanup level based on the OCSRRS ranking evaluation completed in 2007. In the August 2009 Sundry Notice that reports the analytical results of the cleanup, the WOGCC stated that impacted soil exceeding a concentration of 1,000 mg/kg on the west end of the excavation required removal. This site was chosen for subsequent pit investigation by the Pavillion Field Working Group, Pit subgroup as a result of the WOGCC cleanup condition of 1,000 mg/kg. The investigation was targeted toward the west side of the 2008 excavation. This report documents the investigation activities performed at the PF 14-12 pit location in accordance with the field work plan.

2.0 Summary of Field Activities

The primary field activities conducted at PF 14-12 included: utility clearance; soil boring advancement and soil sampling; temporary monitoring well installation, development, and sampling; and final field surveying of all boreholes and temporary monitoring wells.

2.1 Ground Disturbance Activities

In accordance with Encana's Ground Disturbance Practice, all utilities within a 100 foot radius search area were marked. All utilities within 15 feet of a proposed ground disturbance location were positively identified using air and water excavation.

2.2 Soil Assessment

Six soil borings were advanced at the site using direct-push drilling technology following utility clearance. Soil borings SB-1-11 (PF 14-12) through SB-3-11 (PF 14-12) were advanced at locations with potential for impacts along the west side of the previous excavation. Soil borings SB-4-11 (PF 14-12) through SB-6-11 (PF 14-12) were advanced west of the borings from the previous investigation. These were completed to evaluate the western extent of impacts. The soil borings are shown in **Figure 2-1**. Drilling activities were performed by Inberg-Miller Engineers (IME) of Riverton, Wyoming, on August 26 and 29, 2011. Each soil boring was logged by a field geologist. Photoionization detector (PID) headspace readings were collected and recorded at 2-foot intervals. Copies of the soil boring logs are provided in **Appendix A**.

Boring depths ranged from 12 to 15 feet below ground surface (bgs). Groundwater was encountered at depths of 8 to 10.5 feet bgs. The maximum PID readings from each boring were 109 parts per million (ppm) at 8 to 10 feet bgs (SB-1-11 [PF 14-12]); 467 ppm at 4 to 8 feet bgs (SB-2-11 [PF 14-12]); 2,730 ppm at 9 to 11 feet bgs (SB-3-11 [PF 14-12]); and 6 ppm or less from SB-4-11 (PF 14-12), SB-5-11 (PF 14-12), and SB-6-11 (PF 14-12).

One soil sample was collected from each boring at an interval immediately above the water table. All soil samples were submitted for laboratory analysis of TPH as gasoline range organics (GRO) and diesel range organics (DRO), as required by WOGCC. Additional soil samples were collected from each boring from unsaturated intervals with a PID reading greater than 100 ppm for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX). The sampling and analysis conducted on each boring is provided below:

- SB-1-11 (PF 14-12) – One sample was collected for TPH and BTEX analyses;
- SB-2-11 (PF 14-12) – One sample was collected for TPH and BTEX analyses;
- SB-3-11 (PF 14-12) – One sample was collected for TPH analysis and one sample was collected for TPH and BTEX analyses;
- SB-4-11 (PF 14-12) – One sample was collected for TPH and BTEX analyses;
- SB-5-11 (PF 14-12) – One sample was collected for TPH analysis; and
- SB-6-11 (PF 14-12) – One sample was collected for TPH analysis.

All soil samples were submitted to Environmental Science Corporation (ESC) of Mt. Juliet, Tennessee, for laboratory analysis. Analysis of TPH-GRO and DRO was completed using U.S. Environmental Protection Agency (USEPA) Method 8015. Analysis of BTEX was completed using USEPA Method 8260B. A discussion of analytical results is provided in Section 3.1.

All soil borings were surveyed and are shown on **Figure 2-1**. Soil borings SB-2-11 (PF 14-12), SB-4-11 (PF 14-12), SB-5-11 (PF 14-12), and SB-6-11 (PF 14-12) were plugged and abandoned using hydrated bentonite chips.

2.3 Groundwater Assessment

Two temporary monitoring wells were installed at boring locations SB-1-11 (PF 14-12) and SB-3-11 (PF 14-12) on August 26 and 29, 2012, respectively. The temporary monitoring well locations are shown on **Figure 2-1**. The temporary monitoring wells were constructed approximately 5 feet below the water table at depths of 14 feet bgs (SB-1-11 [PF 14-12]) and 15 feet bgs (SB-3-11 [PF 14-12]) respectively. The temporary monitoring wells were constructed using 1-inch Schedule 40 polyvinyl chloride (PVC). A temporary monitoring well was installed at SB-3-11 (PF 14-12) since this soil boring exhibited the greatest potential for groundwater impact based on visual observations and PID readings in excess of 100 ppm. A temporary monitoring well was installed at SB-1-11 (PF 14-12) to provide representative groundwater conditions on the opposite side of the presumed pit location. There also was a potential for groundwater impact at the SB-1-11 (PF 14-12) location based on PID readings in excess of 100 ppm at the water table. Both temporary monitoring wells were developed using a hand bailer on September 1, 2011.

A single groundwater sample was collected from each temporary monitoring well using low-flow sampling techniques. Prior to sample collection, the well was purged using a peristaltic pump until field parameter stability was maintained. Greater than one purge volume of groundwater was removed from each well. Field parameters recorded during well purging included dissolved oxygen, pH, temperature, specific conductance, and oxidation reduction potential. Copies of the groundwater sampling field forms are provided in **Appendix B**. Groundwater samples were packed on ice and submitted to ESC for analysis of TPH-GRO and DRO using USEPA Method 8015, BTEX using USEPA Method 8260B, and SVOC using USEPA Method 8270C. One blind duplicate and one trip blank also were submitted for quality assurance/quality control purposes. A discussion of groundwater sampling results is provided in Section 3.2.

The temporary monitoring wells were surveyed and are shown on **Figure 2-1**. The temporary monitoring wells were left in place pending the PF 14-12 site evaluation.

3.0 Analytical Sample Summary

3.1 Soil Sample Results

Seven soil samples were submitted for analysis of TPH-GRO and DRO. Four of these samples also were submitted for analysis of BTEX. Soil sample TPH results were compared to a TPH concentration of 1,000 mg/kg, which represents the cleanup condition identified by WOGCC in the August 2009 Sundry Notice. Concentrations of BTEX were compared to the residential soil cleanup level and the migration to groundwater cleanup level, both based on the Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division (WDEQ/SHWD) cleanup level spreadsheet effective June 30, 2009.

Analytical soil sample results are summarized in **Table 3-1** and are shown in **Figure 3-1**. A copy of the laboratory report is provided in **Appendix C**.

TPH-GRO was detected in three soil samples and TPH-DRO was detected in six soil samples. Only the soil samples collected from SB-3-11 (PF 14-12) exceeded the cleanup level for TPH. BTEX was not detected in any of the soil samples collected at the site.

3.2 Groundwater Sample Results

One groundwater sample was collected from each temporary monitoring well (SB-1-11 [PF 14-12] and SB-3-11 [PF 14-12]). The samples were analyzed for TPH-GRO and DRO, BTEX, and SVOC.

Groundwater sample results were compared to the WDEQ/SHWD current cleanup levels. Analytical groundwater sample results are summarized in **Table 3-2** and are shown in **Figure 3-2**. A copy of the laboratory report is provided in **Appendix C**.

TPH-DRO was detected in both groundwater samples at concentrations below the applicable cleanup level of 10 mg/L. TPH-GRO, BTEX, and SVOC were not detected in the groundwater at the site.

4.0 Discussion

Analytical results at the site indicate that site groundwater constituent concentrations are below applicable cleanup levels. Concentrations of TPH in the soil are in excess of applicable cleanup levels at soil boring location SB-3-11 (PF 14-12). This soil boring is located on the northwest side of the previous excavation. Soil boring SB-4-11 (PF 14-12) was installed west of SB-3-11 (PF 14-12) to evaluate the western extent of impacts. All constituents at soil boring SB-4-11 (PF 14-12) were below detection limits. Based on these results, further excavation is necessary within this northwest area to remove additional soil.

A work plan detailing the northwest excavation effort will be developed under separate cover. Excavation activities are anticipated to commence upon final approval by the WOGCC in collaboration with the Pavilion Pit Working Group. Future soil removal will be conducted under the WOGCC pit closure guidelines.

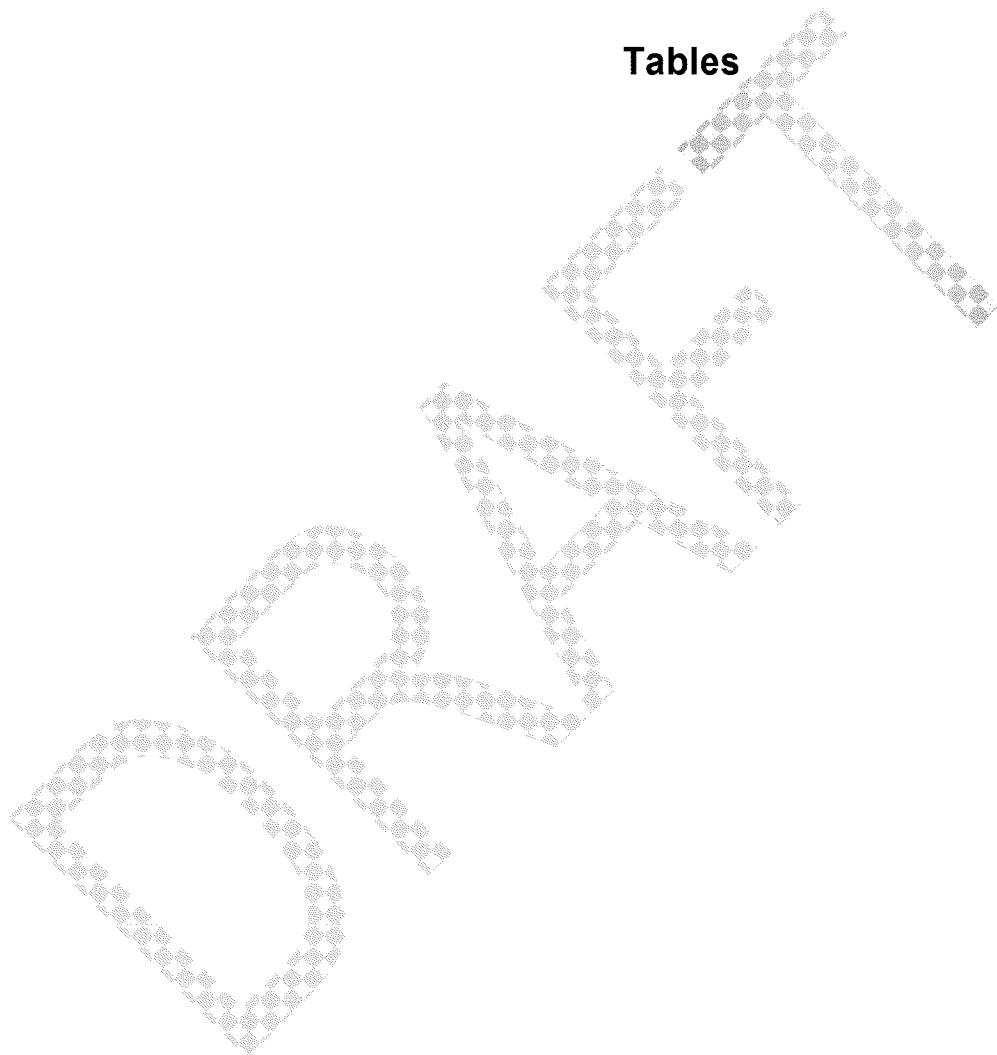


5.0 References

AECOM. 2011. Pavillion Natural Gas Field, Fremont County, Wyoming, Encana Oil and Gas (USA) Inc., Field Work Plan for Site Investigations – August and September 2011. August 2011.



Tables



Draft - Table 3-1 - Soil Analytical Results, August 2011
 Pavillion Fee 14-12, Pavillion Natural Gas Field, Wyoming

Sample Name					SB-1-11	SB-2-11	SB-3-11	SB-3-11	SB-4-11	SB-5-11	SB-6-11
Sample Depth (feet)					4-6	7-8	7-8	9-11	10-12	7.5-8	4-6
Sample Date					8/26/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/29/2011	8/26/2011
Analyte	Units	Method	Residential Soil Cleanup Level ² (mg/kg)	Migration to Groundwater Cleanup Level ² (mg/kg)	Results						
TPH (GC/FID) Low Fraction	mg/kg	GRO	1,000 (Combined) ¹	< 0.50	12	160	340	< 0.50	< 0.50	< 0.50	< 0.50
TPH (GC/FID) High Fraction (DRO Wyoming C10-32)	mg/kg	8015		14	10	1500	1400	< 4.0	46	9.3	
Benzene	mg/kg	8260B	1.1	0.00023	< 0.0050	< 0.050	--	< 0.10	< 0.0050	--	--
Toluene	mg/kg	8260B	5,000	1.7	< 0.025	< 0.25	--	< 0.50	< 0.025	--	--
Ethylbenzene	mg/kg	8260B	5.7	0.0019	< 0.0050	< 0.050	--	< 0.10	< 0.0050	--	--
Total Xylenes	mg/kg	8260B	600	0.23	< 0.015	< 0.15	--	< 0.30	< 0.015	--	--

Notes:

=exceeds Migration to Groundwater Cleanup Levels.

=exceeds Migration to Groundwater Cleanup Levels and Residential Soil Cleanup Levels.

Bold = detection

-- = not analyze; < = sample result is less than the laboratory detection limit; DRO = diesel range organics; FID = flame ionization detector; GC = gas chromatograph; GRO = gasoline range organics; mg/kg = milligrams per kilogram; NA = not available; TPH = total petroleum hydrocarbons

¹ The TPH cleanup level of 1,000 mg/kg is based on the most stringent cleanup level identified in the Wyoming Oil and Gas Conservation Commission "Guideline for Closure of Unlined Production Pits". If TPH is detected at a level greater than 1,000 mg/kg then the appropriate cleanup level will be determined based on the Oil Contaminated Soil Remediation Ranking System (OCSRRS).

² Soil cleanup levels are based on the Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division (DEQ/SHWD) cleanup level spreadsheet effective June 30, 2009.

Draft - Table 3-2 - Groundwater Analytical Results, August 2011
Pavillion Fee 14-12, Pavillion Natural Gas Field, Wyoming

Sample Name				SB-1-11 ¹	SB-3-11 ¹
Sample Date				9/9/2011	9/9/2011
Analyte	Units	Method	Water Cleanup Level ² (mg/L)	Results	
TPH (GC/FID) Low Fraction	mg/L	GRO	7.3	< 0.10	< 0.10
TPH (GC/FID) High Fraction (DRO Wyoming C10-32)	mg/L	8015	1.1 ³ /10 ⁴	0.36	1.2
Benzene	mg/L	8260B	0.005	< 0.0010	< 0.0010
Toluene	mg/L	8260B	1	< 0.0050	< 0.0050
Ethylbenzene	mg/L	8260B	0.7	< 0.0010	< 0.0010
Total Xylenes	mg/L	8260B	10	< 0.0030	< 0.0030
Semi-Volatile Organic Compounds (SVOC)	mg/L	8270C	--	Not Detected	Not Detected

Notes:

< = sample result is less than the laboratory detection limit; DRO = diesel range organics; FID = flame ionization detector; GC = gas chromatograph; GRO = gasoline range organics; mg/L = milligrams per liter; NA = not available; TPH = total petroleum hydrocarbons

Bold = detection

-- = No water cleanup level available

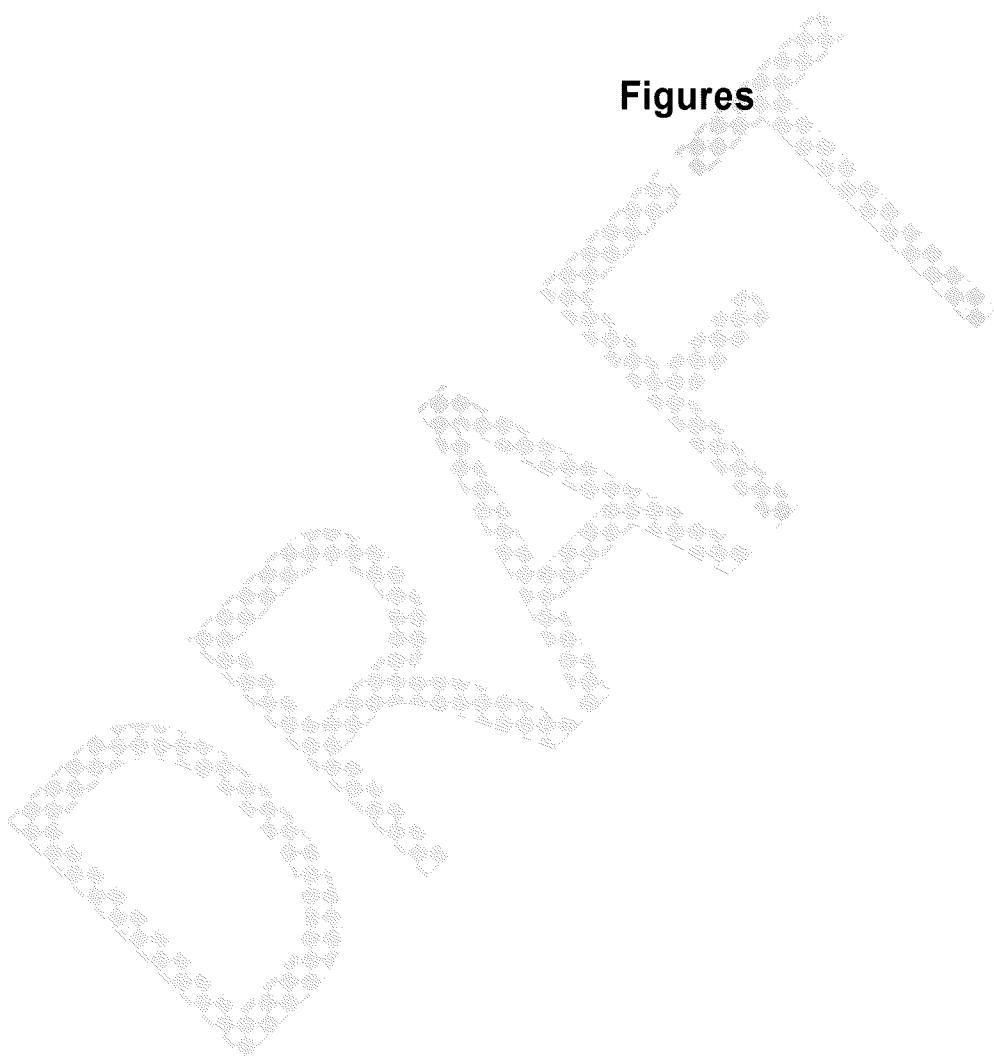
¹ Samples SB-1-11 and SB-3-11 were analyzed for SVOCs using method 8270C. All SVOCs were below detection limits (see corresponding laboratory report).

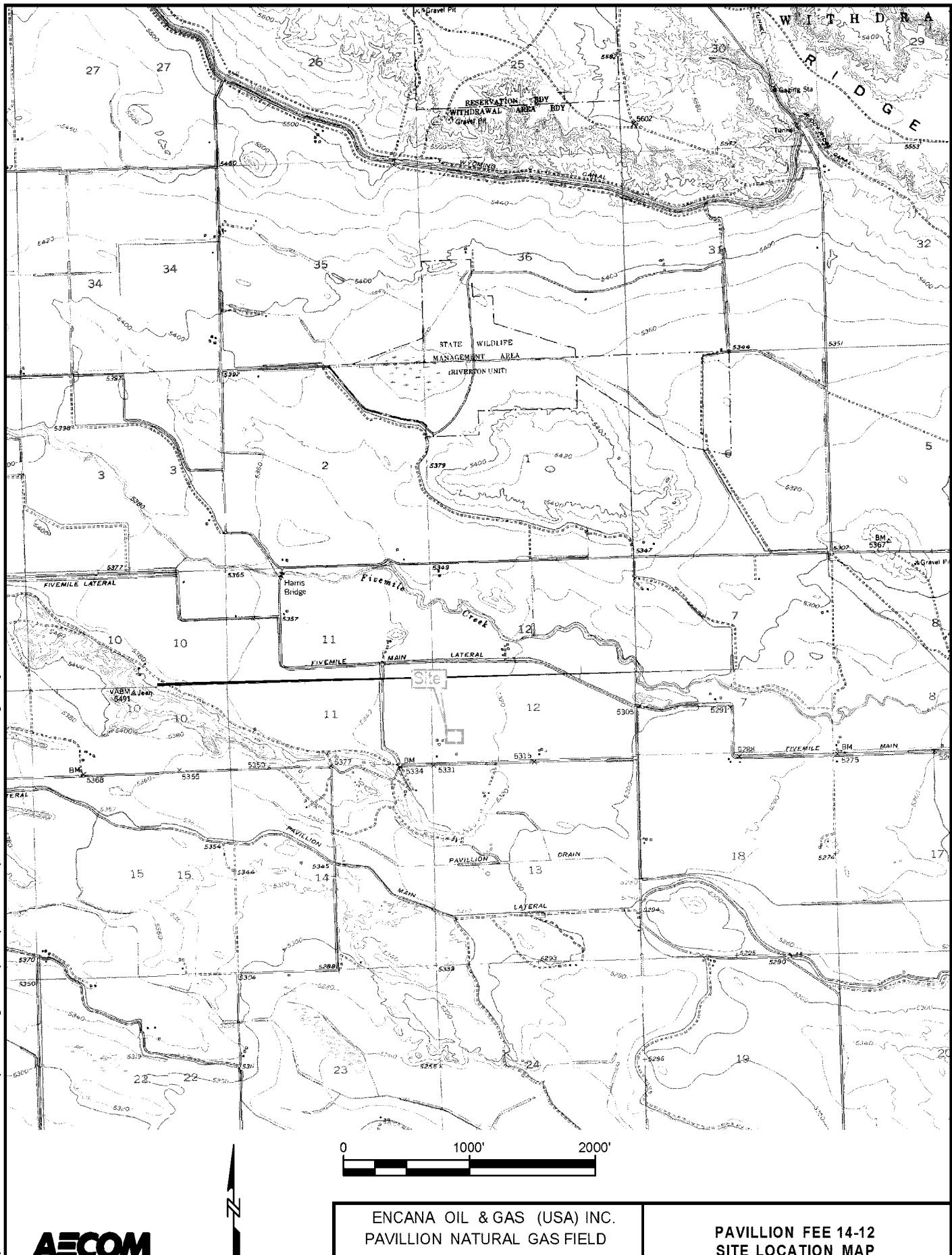
² Groundwater cleanup levels are based on the Wyoming Department of Environmental Quality/Solid and Hazardous Waste Division (DEQ/SHWD) cleanup level spreadsheet effective June 30, 2009.

³ This level is applicable when naphthalene and/or methylnaphthalenes are detected in groundwater at measurable concentrations.

⁴ This level is applicable when naphthalene and/or 2-Methylnaphthalene are below MCL/DWEL concentrations in groundwater along with the other chemicals of concern AND no free product is present on the groundwater table.

Figures





AECOM

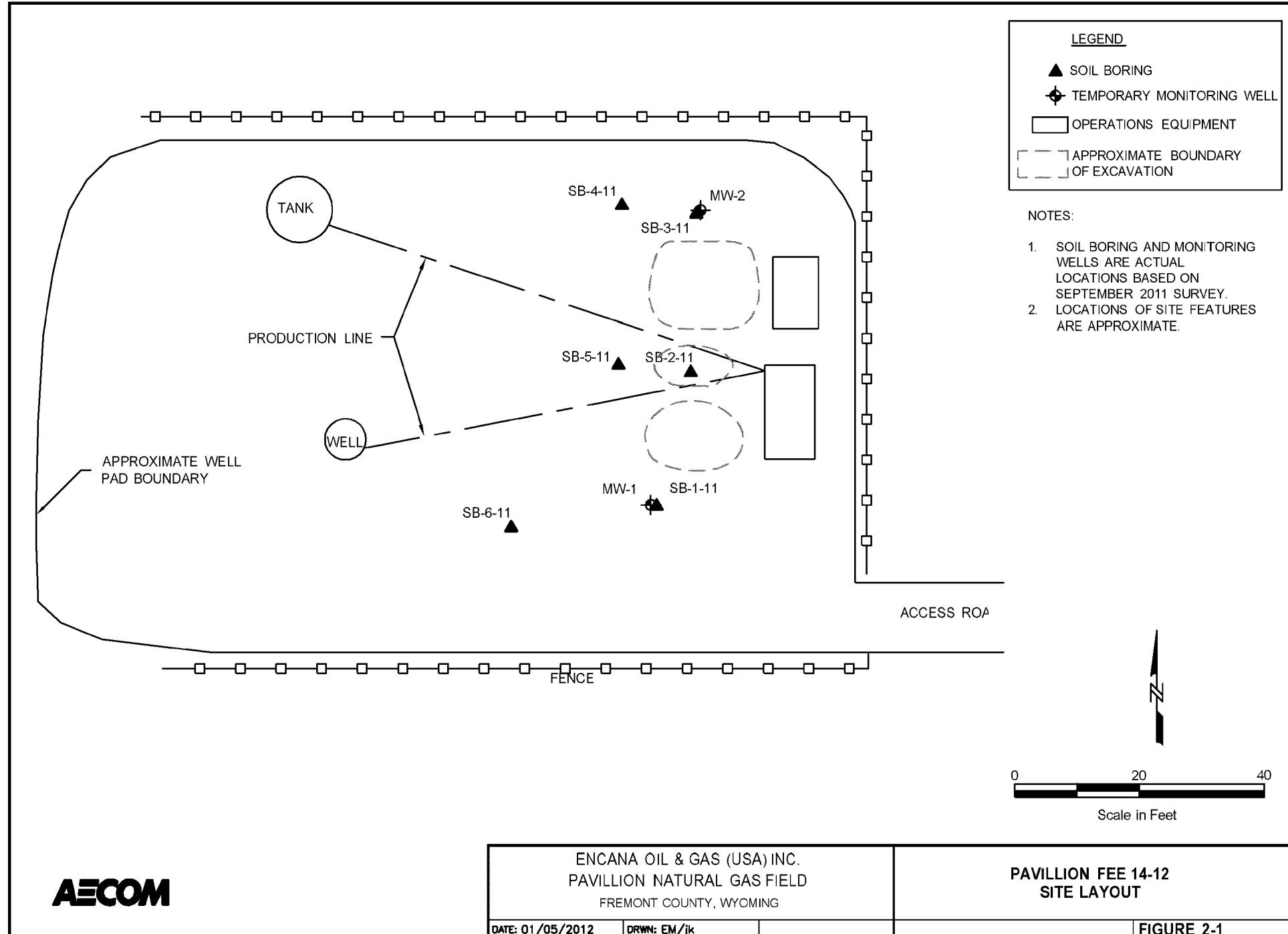
ENCANA OIL & GAS (USA) INC.
PAVILLION NATURAL GAS FIELD
FREMONT COUNTY, WYOMING

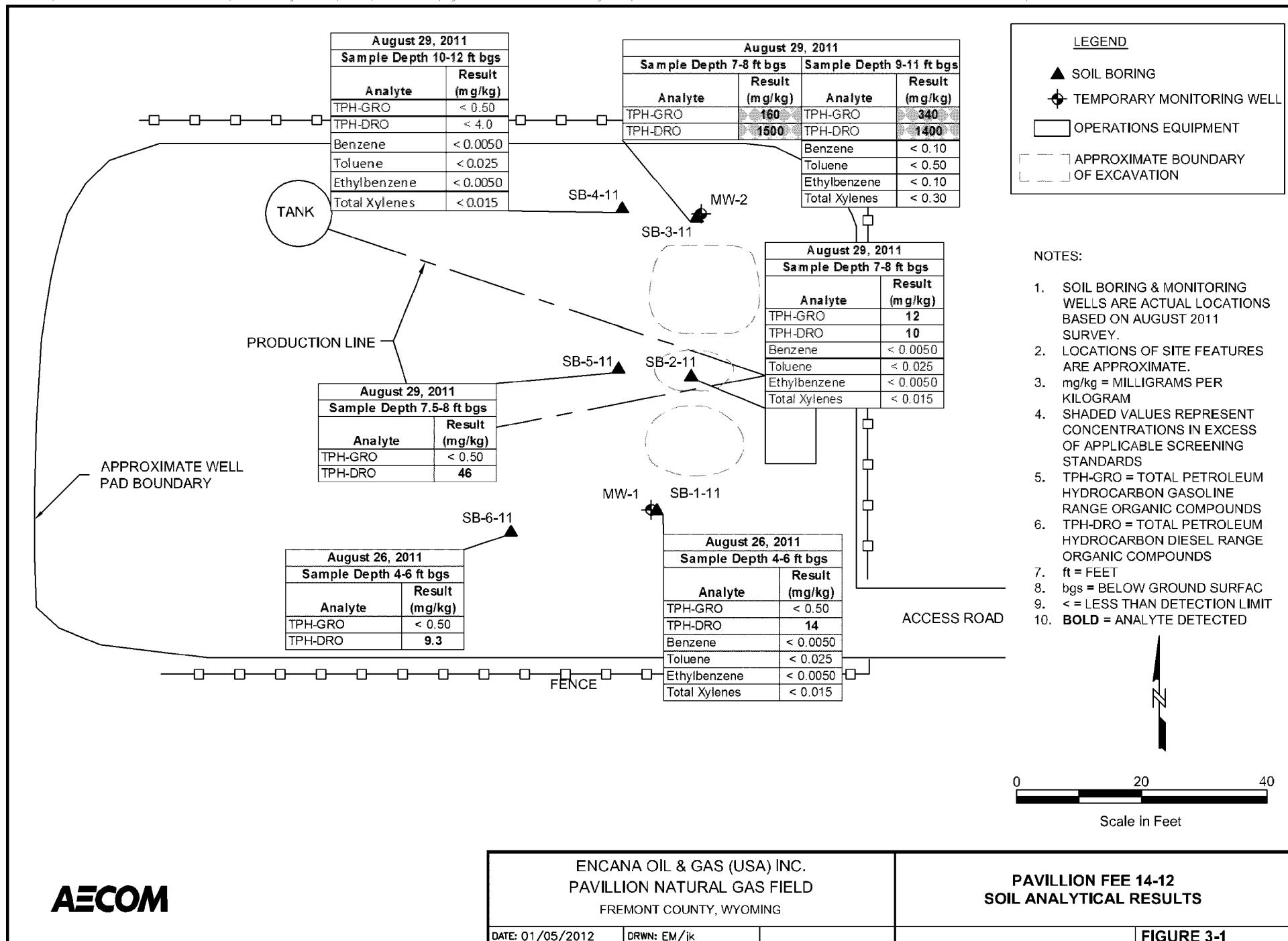
DATE: 1/4/12 DRWN: EM/FTC

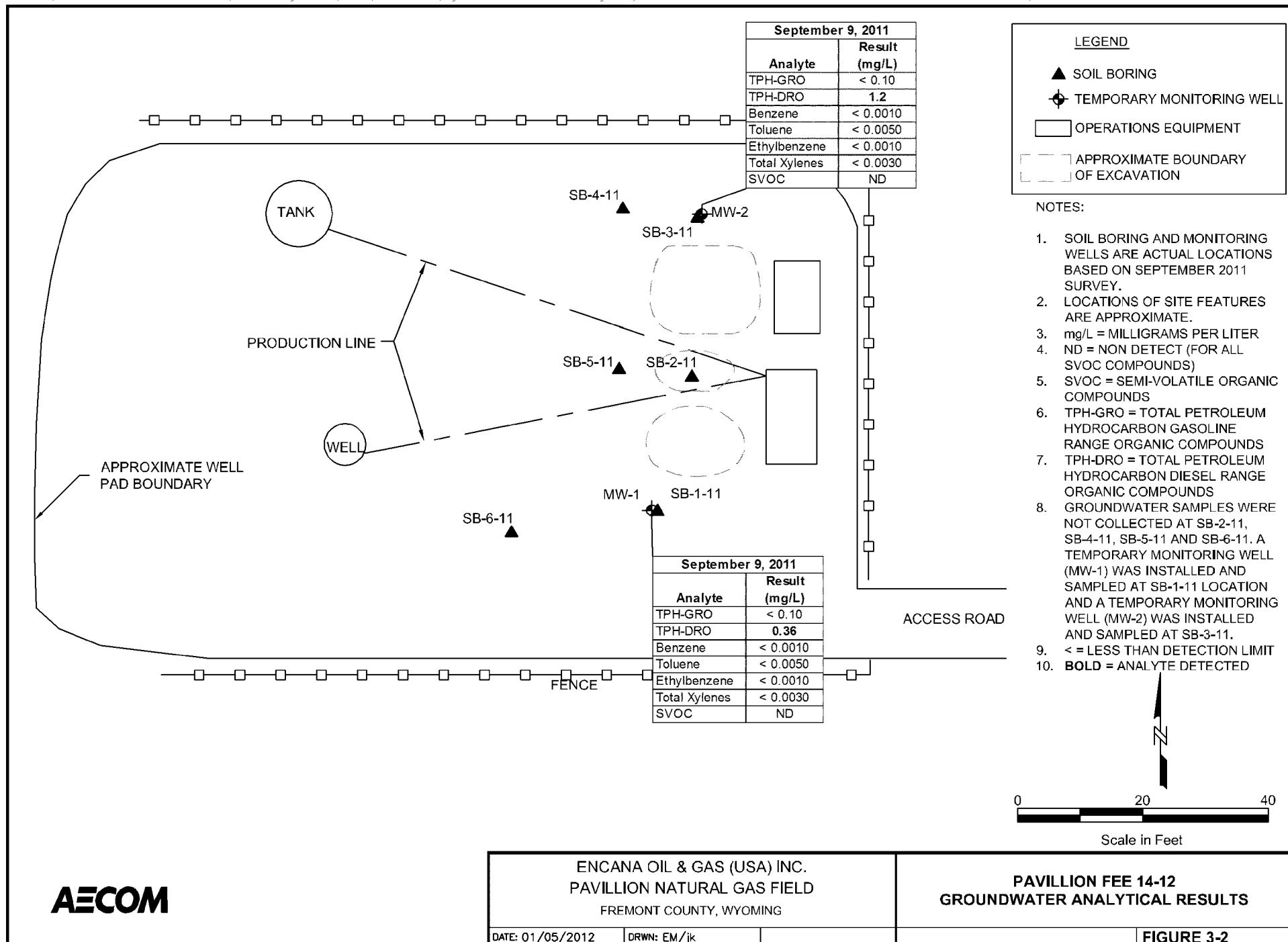
PAVILLION FEE 14-12
SITE LOCATION MAP

FIGURE 1-1

EPAPAV0047668









Appendix A

Soil Boring Logs

AECOM		Client: Encana Oil & Gas (USA) Inc. Project Number: 60221849 Site Location: Pavillion, WY Coordinates: TBD Elevation: TBD Drilling Method: Geoprobe Direct Push Sample Type(s): Soil Boring Diameter: 2-inch					BORING ID: SB-1-11 (PF 14-12) Sheet: 1 of 1 Monitoring Well Installed: Yes Screened Interval: 4-14 ft				
		Drilling Contractor: Inberg-Miller Engineers Logged By: C. Ahrendt Date/Time Started: 8/26/11 15:40		Depth of Boring: 14 ft							
Drilling Contractor: Inberg-Miller Engineers Logged By: C. Ahrendt Date/Time Started: 8/26/11 15:40		Ground Elevation: TBD Date/Time Finished: 8/26/11 16:30		Water Level: 9 ft							
Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)					
1	DP	40	4.2	NA	SP	Sand with some gravel, poorly graded					
2						0.25 ft: Silt, medium stiff, non-plastic, dark grayish brown(10YR4/2), moist					
3											
4						Silty clay, medium stiff, medium plasticity, (10YR4/3), moist					
5	DP	20	7.2	NA	ML						
6											
7											
8											
9	DP	60	109	NA	CL	As above					
10						As above. soft, saturated, very dark gray staining(10YR3/1), organic-like odor					
11											
12						Driven blind 12-14 ft					
13	DP	NA	NA								
14						Total Depth = 14 ft					
15											
16											
17											
18											
19											
20											
NOTES: Blow Counts are not recorded with Geoprobe Rig DP = Direct Push, 4 foot acetate sleeve TBD = To Be Determined ft = Feet NA = Not Applicable Checked by: Christopher Ahrendt Date: 1/5/2012											
WELL DETAILS: ppm = Parts per million bgs = Below ground surface Temporary well screened from 4-14 ft bgs. Sandpack 1-14" 3/8" Bentonite Chips 0-1 ft bgs 1-inch Schedule 80 PVC											

EPAPAV0047673



<p><i>Client:</i> Encana Oil & Gas (USA) Inc. <i>Project Number:</i> 60221849 <i>Site Location:</i> Pavillion, WY <i>Coordinates:</i> TBD <i>Elevation:</i> TBD <i>Drilling Method:</i> Geoprobe Direct Push <i>Sample Type(s):</i> Soil <i>Boring Diameter:</i> 2-inch</p>						BORING ID: SB-2-11 (PF 14-12)	
<i>Drilling Contractor:</i> Inberg-Miller Engineers <i>Logged By:</i> J.Hurshman <i>Date/Time Started:</i> 8/29/11 08:10 <i>Ground Elevation:</i> TBD <i>Date/Time Finished:</i> 8/29/11 <i>Water Level:</i> 8 ft							
1	DP	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	
2	DP	25	6.7	-	SM CL	No recovery 0-3 ft 6 inches: brown silty sand, Dry, few pebbles, no odor, no staining 6 inches: gray silt with clay, dry, slight mottled colors, no visual impacts	
3							
4	DP	20	467	Little recovery	SM		
5							
6	DP	25	14.6	7.5-8ft: impacts at 7.5', black staining, odor, then brown silty sand with clay mix, moist	CL		
7							
8	DP	25	14.6	10.5-12ft: moist to wet, silty clay, brown, moderate sorting, slight plasticity, some odor, no visual staining, sand increases towards 12 ft bgs	CL		
9							
10	DP	25	14.6	Total Depth = 12 ft	CL		
11							
12	DP	25	14.6	SB-2-11(TP-14-12)(7-8) - 08-25, TPH-GRO,DRO , BTEX	CL		
13							
14	DP	25	14.6	7-8	CL		
15							
16	DP	25	14.6	CL	CL		
17							
18	DP	25	14.6	CL	CL		
19							
20	DP	25	14.6	CL	CL		
21							
NOTES: Blow Counts are not recorded with Geoprobe Rig ppm = Parts per million DP = Direct Push, 4 foot acetate sleeve bgs = Below ground surface TBD = To Be Determined ft - Feet NA = Not Applicable Checked by: Jeremy Hurshman Date: 11/28/11							

 <p>Client: Encana Oil & Gas (USA) Inc. Project Number: 60221849 Site Location: Pavillion, WY Coordinates: TBD Elevation: TBD Drilling Method: Geoprobe Direct Push Sample Type(s): Soil Boring Diameter: 2-inch</p>		BORING ID:	
		SB-3-11 (PF 14-12)	
		Sheet: 1 of 1	
		Monitoring Well Installed: Yes	
		Screened Interval: 5-15 ft	
		Depth of Boring: 15 ft	
Drilling Contractor: Inberg-Miller Engineers Logged By: J. Hurshman Date/Time Started: 8/29/11 08:30 Ground Elevation: TBD Date/Time Finished: 8/29/11 08:40 Water Level: 10 ft			
1	DP	Blows per 6"	Recovery (%)
2			Headspace (ppm)
3			U.S.C.S
4			
5			
6	DP		
7			
8			
9			
10	DP		
11			
12			
13	DP		
14			
15			
16			
17			
18			
19			
20			
MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)			
No recovery 0-3 ft Dry, silty sand, mixed with pebbles, poorly sorted, brown with gray and yellow zones, no odor, no staining, moist at 4ft, oxidation zones			
No recovery 4-7 ft Brown, moist, silty clay. 7.5 ft: black staining on top of gray moist sand, moderate sorting, odor			
Silty sands with clay lenses, black staining 9-11 ft, wet at 10 ft, odor, No staining 11-12 ft, brown sand			
Continued brown sand with silty clay lenses, 3inch section at 13 ft of impacted black sand, wet, odor			
Total Depth = 15 ft			
NOTES: Blow Counts are not recorded with Geoprobe Rig DP = Direct Push, 4 foot acetate sleeve TBD = To Be Determined ft = Feet NA = Not Applicable Checked by: Jeremy Hurshman		WELL DETAILS: ppm = Parts per million bgs = Below ground surface Monitoring well MW-2 installed(TD = 15 ft) Screened 5-15 ft Sandpack = 4-15 ft, hydrated bentonite 0-4 ft	
Date: 1/5/12		SB-3-11 (TP-14-12)(9-1) - 09-25, TPH-DRO,GRO, BTEX	
		SB-3-11 (TP-14-12)(7-8) - 09-23	
		Lab Sample ID Lab Sample Depth (ft)	

EPAPAV0047675



Client: Encana Oil & Gas (USA) Inc. Project Number: 60221849 Site Location: Pavillion, WY Coordinates: TBD Elevation: TBD Drilling Method: Geoprobe Direct Push Sample Type(s): Soil						BORING ID: SB-4-11 (PF 14-12) Sheet: 1 of 1 Monitoring Well Installed: No Screened Interval: NA		
Drilling Contractor: Inberg-Miller Engineers						Logged By: J.Hurshman Date/Time Started: 8/29/11 09:05 Ground Elevation: TBD Date/Time Finished: 8/29/11 09:30		
Depth of Boring: 12 ft Water Level: 10.5 ft								
Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID Lab Sample Depth (ft)	
1	DP	25	NA	-	CL	No recovery 0-3 ft	SB-4-11 (PF 14-12) - 0920 TPH-GRO/DRO 10-12 ft	
2						3-4 ft: Silt with some sand and increasing clay at 4 ft, dry to 3.5 ft, moist at 4 ft, no visual impacts, moderate to poor sorting		
3						No recovery 4-7.5 ft		
4	DP	15	NA	6	CL	7.5 ft: Brown, moist, silty clay, no visual impacts, moderate sorting, little to no sand, moderate plasticity	SB-4-11 (PF 14-12) - 0920 TPH-GRO/DRO 10-12 ft	
5						No recovery 8-10 ft		
6								
7	DP	50	NA	5	CL	Silty clay with silty sand lenses, brown, moist to wet, no visual impacts, increasing sand with depth, poorly sorted, no large clasts	SB-4-11 (PF 14-12) - 0920 TPH-GRO/DRO 10-12 ft	
8								
9								
10	DP	50	NA	5	CL	Total Depth = 12 ft	SB-4-11 (PF 14-12) - 0920 TPH-GRO/DRO 10-12 ft	
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

NOTES:

Blow Counts are not recorded with Geoprobe Rig
DP = Direct Push, 4 foot acetate sleeve

ppm = Parts per million
bgs = Below ground surface

TBD = To Be Determined

ft = Feet

NA = Not Applicable

Checked by: Jeremy Hurshman Date: 11/28/11

AECOM <i>Client:</i> Encana Oil & Gas (USA) Inc. <i>Project Number:</i> 60221849 <i>Site Location:</i> Pavillion, WY <i>Coordinates:</i> TBD <i>Elevation:</i> TBD <i>Drilling Method:</i> Geoprobe Direct Push <i>Sample Type(s):</i> Soil <i>Boring Diameter:</i> 2-inch						BORING ID: SB-5-11 (PF 14-12)								
<i>Drilling Contractor:</i> Inberg-Miller Engineers		<i>Logged By:</i> J.Hurshman		<i>Date/Time Started:</i> 8/29/11 08:40		<i>Depth of Boring:</i> 12 ft								
		<i>Ground Elevation:</i> TBD		<i>Date/Time Finished:</i> 8/29/11 09:00		<i>Water Level:</i> 10.5 ft								
Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)								
1	DP	50	NA	-	CL	No recovery 0-2 ft								
2						2-4 ft: Brown, silty clays and sand, Dry 0-3.5 ft, moist at 3.5 ft, poorly sorted, no odor, no staining								
3	DP	15	NA	-	SC	No recovery 4-7.5 ft								
4						7.5 ft: brown silty sand, mottled gray color mixed with some black staining, slight odor, moist								
5	DP	50	NA	-	SM-SC	No recovery 8-10 ft								
6						Silty sand and clay, brown, no staining, no odor, wet, moderate plasticity in clay zones								
7	DP	3	-	-		Total Depth = 12 ft								
8														
9	DP	50	NA	-										
10														
11	DP	3	-	-										
12														
13	DP	50	NA	-										
14														
15	DP	3	-	-										
16														
17	DP	3	-	-										
18														
19	DP	3	-	-										
20														
NOTES: Blow Counts are not recorded with Geoprobe Rig DP = Direct Push, 4 foot acetate sleeve TBD = To Be Determined ft - Feet NA = Not Applicable Checked by: Jeremy Hurshman Date: 11/28/11														
ppm = Parts per million bgs = Below ground surface														
SB-5-11(TP-14-12)(7.5-8) - 09:00, TPH-DRO/GRO														
7.5-8														

EPAPAV0047677



Client: Encana Oil & Gas (USA) Inc. Project Number: 60221849 Site Location: Pavillion, WY Coordinates: TBD Elevation: TBD Drilling Method: Geoprobe Direct Push Sample Type(s): Soil						BORING ID: SB-6-11 (PF 14-12) Sheet: 1 of 1 Monitoring Well Installed: No Screened Interval: NA Depth of Boring: 12 ft Water Level: 9 ft	
Drilling Contractor: Inberg-Miller Engineers		Logged By: C. Ahrendt		Date/Time Started: 8/26/11 15:20			
		Ground Elevation: TBD		Date/Time Finished: 8/26/11 15:50		Water Level: 9 ft	
Depth (ft)	Sample Type	Blows per 6"	Recovery (%)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	
1	DP	60	3.6	SM	Sand with silt, fine grained, poorly graded, pale brown (10YR6/3)	(14-12) (SB-6-11) (4-6); 15:50; TPH-DRO & GRO	Lab Sample ID 4-6
2					Silt, medium stiff, non-plastic, brown(10YR5/3), moist		
3					ML		
4	DP	30	4.2	CL	Silty clay, medium stiff, low plasticity, brown (10YR4/3), moist	As above, soft, medium plasticity, saturated	Lab Sample Depth (ft)
5					5.1		
6					NA		
7	DP	65	5.1	SM	Silty sand, fine grained, poorly graded, brown (10YR4/3), saturated	Total Depth = 12 ft	4-6
8					5.2		
9					As above, soft, medium plasticity, saturated		
10	DP	5.2	SM		Silty sand, fine grained, poorly graded, brown (10YR4/3), saturated		
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

NOTES:

Blow Counts are not recorded with Geoprobe Rig
DP = Direct Push. 4 foot acetate sleeve

TBD = To Be Determined

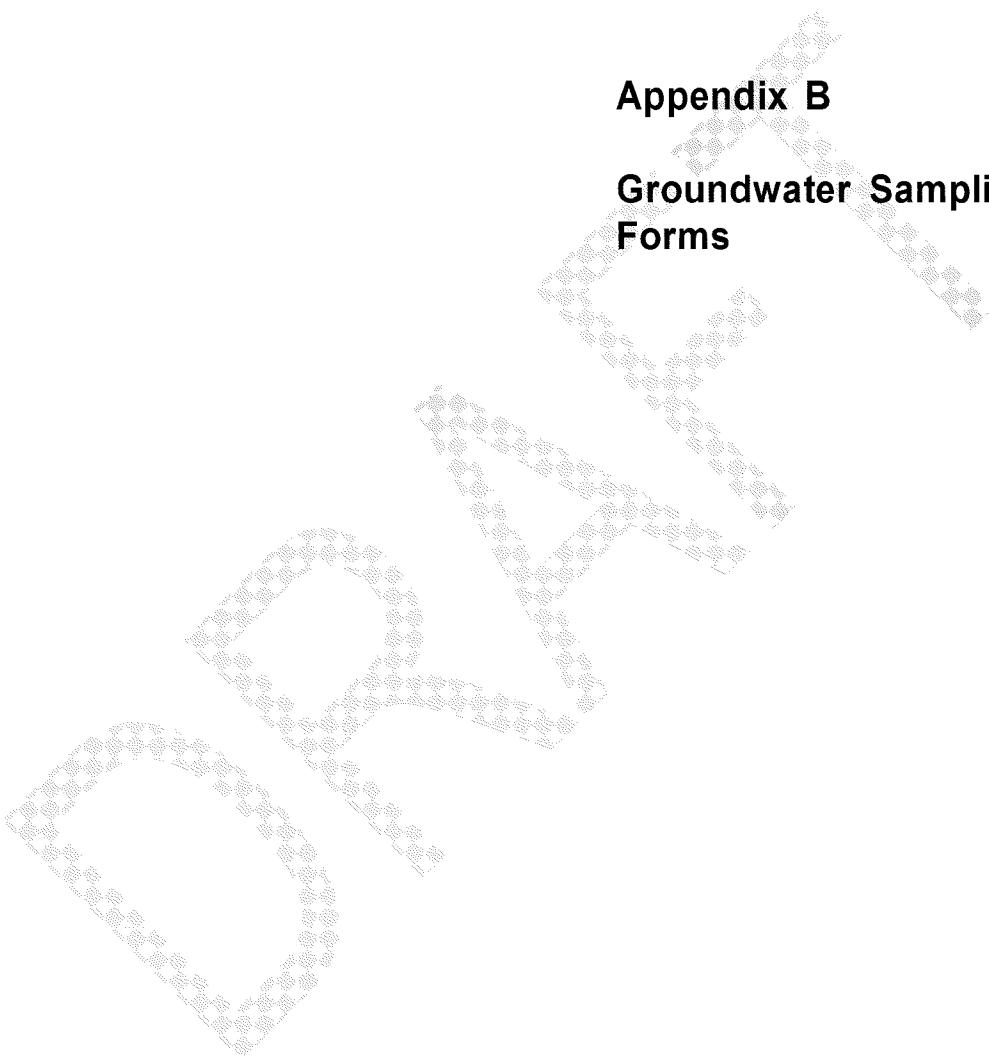
ft = Feet

NA = Not Applicable

Checked by: Christopher Ahrendt

ppm = Parts per million
bgs = Below ground surface

Date: 1/5/2012



Appendix B

Groundwater Sampling Forms



Well/Piezo ID:
SB-1-11 (PF 14-12)

Ground Water Sample Collection Record

Client:	Encana	Date:	09-09-11
Project No:	60221849	Time: Start	09:10 am
Site Location:	PF 14-12	Stop	09:40 am
Weather Conds:	Sunny 55°F	Collector(s)	D. Fairchild

WATER LEVEL DATA: (measured from Top of Casing)

- a. Total Well Length 14.18 c. Casing Material Sch 40 PVC Well Piezometer
e. Length of Water Column 3.52 (a-b)
b. Water Table Depth 10.66 d. Casing Diameter 1" f. Calculated Well Volume (gallons) 0.15
1" - 0.043 2" - 0.171 4" - 0.652

WELL PURGING DATA

- a. Purge Method (peristaltic, bailer, pump, etc.) Peristaltic pump

- b. Acceptance Criteria defined (from workplan)

- Minimum Required Purge Volume (@ 1 well volumes) 0.15
- Maximum Allowable Turbidity -- NTUs
- Stabilization of parameters 10 %

- c. Field Testing Equipment Used: Make YSI Model 556 Serial Number 09B100196

- d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time (hr:min)	Volume Removed (gal)	Temp (°C)	pH	Spec. Cond (mS/cm)	DO (%)	DO (mg/l)	ORP (mV)	Color	Odor	Other
9:15	Initial	13.28	6.99	7.033	41.1	4.07	6.7	Brown	--	--
9:19	0.15	12.85	7.1	7.020	17.5	1.79	1.9	Brown	--	--
9:23	0.3	13.00	7.13	6.761	13.1	1.35	-3.7	Brown	--	--
9:27	0.45	12.82	7.14	6.641	11.6	1.20	-7.9	Cloudy	--	--

- e. Acceptance criteria pass/fail Yes No N/A

Has required volume been removed

Has required turbidity been reached

Have parameters stabilized

If no or N/A - Explain below.

Well purged dry

SAMPLE COLLECTION: Method: Peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time	Date
SB-1-11 (PF 14-12)	1L Amber	2	None	SVOC	9:33	9/9/2011
SB-1-11 (PF14-12)	40 mL VOA	2	HCL	BTEX	9:33	9/9/2011
SB-1-11 (PF 14-12)	40 mL VOA	2	HCL	TPH	9:33	9/9/2011
SB-1-11 (PF 14-12)	40 mL VOA	2	HCL	DRO C10-32	9:33	9/9/2011

Comments _____

Signature: Dawn Fairchild Date: September 9, 2011



Well/Piezo ID:
SB-3-11 (PF 14-12)

Ground Water Sample Collection Record

Client:	Encana	Date:	09-09-11
Project No:	60221849	Time: Start	08:30 am
Site Location:	PF 14-12	Stop	09:05 am
Weather Conds:	Sunny 55°F	Collector(s)	D. Fairchild

WATER LEVEL DATA: (measured from Top of Casing)

a. Total Well Length 15.24 c. Casing Material Sch 40 PVC Well Piezometer
e. Length of Water Column 5.13 (a-b)

b. Water Table Depth 10.11 d. Casing Diameter 1" f. Calculated Well Volume (gallons) 0.22
1" - 0.043 2" - 0.171 4" - 0.652

WELL PURGING DATA

a. Purge Method (peristaltic, bailed, pump, etc.) Peristaltic pump

b. Acceptance Criteria defined (from workplan)

- Minimum Required Purge Volume (@ 1 well volumes) 0.22
- Maximum Allowable Turbidity -- NTUs
- Stabilization of parameters 10 %

c. Field Testing Equipment Used: Make YSI Model 556 Serial Number 09B100196

d. Field Testing Equipment Calibration Documentation Found in Field Notebook # _____ Page # _____

Time (hr:min)	Volume Removed (gal)	Temp (°C)	pH	Spec. Cond (mS/cm)	DO (%)	DO (mg/l)	ORP (mV)	Color	Odor	Other
8:43	Initial	13.22	6.60	4.561	43.0	5.88	20.5	Brown	Slight	—
8:47	0.3	13.08	6.85	4.526	23.1	2.38	2.9	Brown	Slight	—
8:51	0.45	12.94	6.89	4.518	17.2	1.78	-7.3	Brown	Slight	—
8:55	0.6	13.15	6.88	4.515	16.3	1.63	-10.0	Cloudy	Slight	—
8:59	0.75	13.19	6.87	4.517	15.7	1.62	-10.8	Cloudy	Slight	—

e. Acceptance criteria pass/fail

Has required volume been removed

Has required turbidity been reached

Have parameters stabilized

If no or N/A - Explain below.

Well purged dry

SAMPLE COLLECTION:

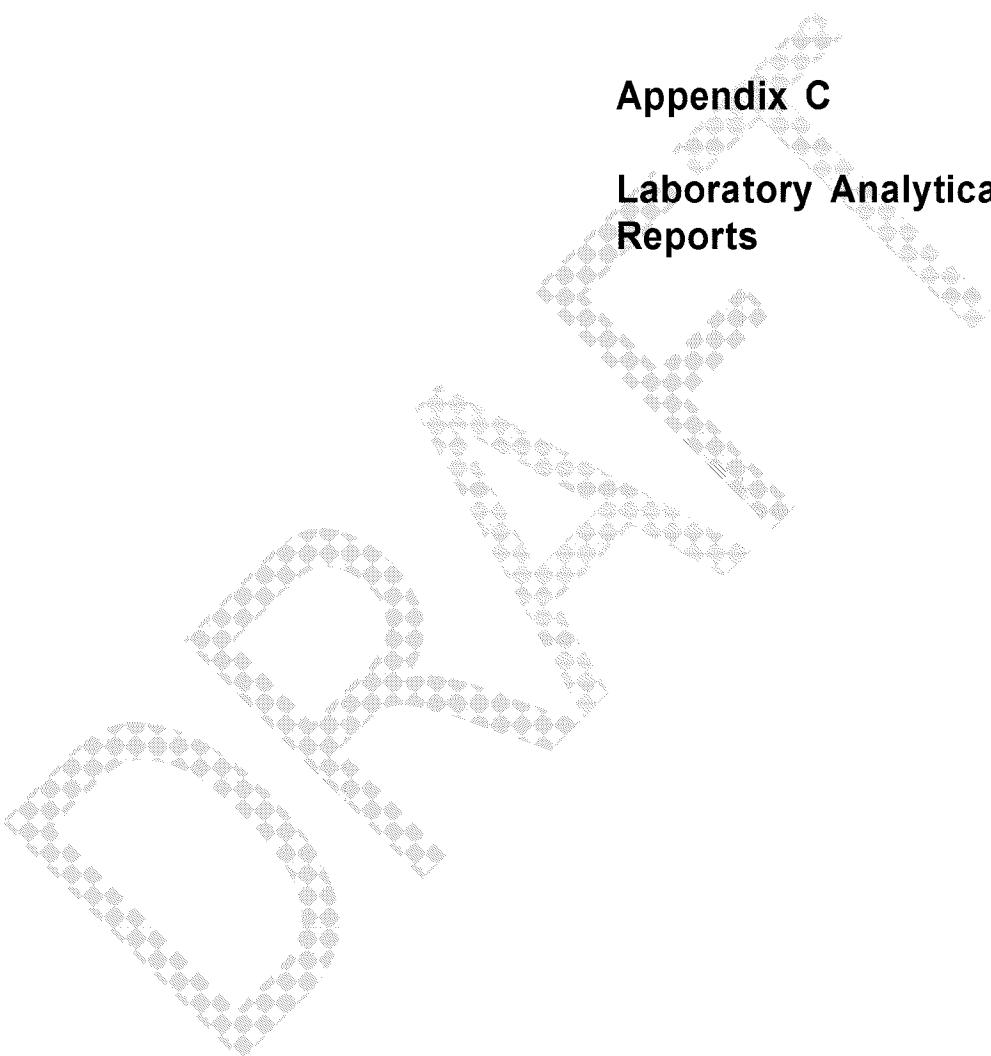
Method: Peristaltic pump

Sample ID	Container Type	No. of Containers	Preservation	Analysis	Time	Date
SB-3-11 (PF 14-12)	1L Amber	2	None	SVOC	9:00	9/9/2011
SB-3-11 (PF14-12)	40 mL VOA	2	HCL	BTEX	9:00	9/9/2011
SB-3-11 (PF 14-12)	40 mL VOA	2	HCL	TPH	9:00	9/9/2011
SB-3-11 (PF 14-12)	40 mL VOA	2	HCL	DRO C10-32	9:00	9/9/2011

Comments

Signature: Dawn Fairchild

Date: September 9, 2011



Appendix C

Laboratory Analytical Reports



12065 Lebanon Rd.
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Tax I.D. 62-0814289
Est. 1970

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Report Summary

Monday September 19, 2011

Report Number: L535398

Samples Received: 09/10/11

Client Project: 60196941

Description: EnCana Pavillion

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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Est. 1970

REPORT OF ANALYSIS

September 19, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 10, 2011
Description : EnCana Pavillion
Sample ID : SB-3-11/TP-14-12
Collected By : Dawn Fairchild
Collection Date : 09/09/11 09:00

ESC Sample # : L535398-02
Site ID : PAVILLION
Project # : 60196941

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	GRO	09/10/11	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	93.7		% Rec.	GRO	09/10/11	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/11	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/11	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/11	1
Total Xylenes	BDL	0.0030	mg/l	8260B	09/11/11	1
Surrogate Recovery Toluene-d8	103.		% Rec.	8260B	09/11/11	1
Dibromofluoromethane	105.		% Rec.	8260B	09/11/11	1
a,a,a-Trifluorotoluene	98.1		% Rec.	8260B	09/11/11	1
4-Bromofluorobenzene	96.8		% Rec.	8260B	09/11/11	1
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	1.2	0.10	mg/l	8015	09/14/11	1
Surrogate recovery(%) o-Terphenyl	105.		% Rec.	8015	09/14/11	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Acenaphthylene	BDL	0.0010	mg/l	8270C	09/15/11	1
Anthracene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzidine	BDL	0.010	mg/l	8270C	09/15/11	1
Benzo(a)anthracene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(b)fluoranthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(k)fluoranthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(g,h,i)perylene	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzo(a)pyrene	BDL	0.0010	mg/l	8270C	09/15/11	1
Bis(2-chlorethoxy)methane	BDL	0.010	mg/l	8270C	09/15/11	1
Bis(2-chloroethyl)ether	BDL	0.010	mg/l	8270C	09/15/11	1
Bis(2-chloroisopropyl)ether	BDL	0.010	mg/l	8270C	09/15/11	1
4-Bromophenyl-phenylether	BDL	0.010	mg/l	8270C	09/15/11	1
2-Chloronaphthalene	BDL	0.0010	mg/l	8270C	09/15/11	1
4-Chlorophenyl-phenylether	BDL	0.010	mg/l	8270C	09/15/11	1
Chrysene	BDL	0.0010	mg/l	8270C	09/15/11	1
Dibenz(a,h)anthracene	BDL	0.0010	mg/l	8270C	09/15/11	1
3,3-Dichlorobenzidine	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dinitrotoluene	BDL	0.010	mg/l	8270C	09/15/11	1
2,6-Dinitrotoluene	BDL	0.010	mg/l	8270C	09/15/11	1
Fluoranthene	BDL	0.0010	mg/l	8270C	09/15/11	1
Fluorene	BDL	0.0010	mg/l	8270C	09/15/11	1
Hexachlorobenzene	BDL	0.0010	mg/l	8270C	09/15/11	1
Hexachloro-1,3-butadiene	BDL	0.010	mg/l	8270C	09/15/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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Est. 1970

REPORT OF ANALYSIS

September 19, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 10, 2011
Description : EnCana Pavillion
Sample ID : SB-3-11/TP-14-12
Collected By : Dawn Fairchild
Collection Date : 09/09/11 09:00

ESC Sample # : L535398-02

Site ID : PAVILLION
Project # : 60196941

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachlorocyclopentadiene	BDL	0.010	mg/l	8270C	09/15/11	1
Hexachloroethane	BDL	0.010	mg/l	8270C	09/15/11	1
Indeno(1,2,3-cd)pyrene	BDL	0.0010	mg/l	8270C	09/15/11	1
Isophorone	BDL	0.010	mg/l	8270C	09/15/11	1
Naphthalene	BDL	0.0010	mg/l	8270C	09/15/11	1
Nitrobenzene	BDL	0.010	mg/l	8270C	09/15/11	1
n-Nitrosodimethylamine	BDL	0.010	mg/l	8270C	09/15/11	1
n-Nitrosodiphenylamine	BDL	0.010	mg/l	8270C	09/15/11	1
n-Nitrosodi-n-propylamine	BDL	0.010	mg/l	8270C	09/15/11	1
Phenanthere	BDL	0.0010	mg/l	8270C	09/15/11	1
Benzylbutyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Bis(2-ethylhexyl)phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Di-n-butyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Diethyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Dimethyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Di-n-octyl phthalate	BDL	0.0010	mg/l	8270C	09/15/11	1
Pyrene	BDL	0.0010	mg/l	8270C	09/15/11	1
1,2,4-Trichlorobenzene	BDL	0.010	mg/l	8270C	09/15/11	1
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.010	mg/l	8270C	09/15/11	1
2-Chlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dichlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dimethylphenol	BDL	0.010	mg/l	8270C	09/15/11	1
4,6-Dinitro-2-methylphenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4-Dinitrophenol	BDL	0.010	mg/l	8270C	09/15/11	1
2-Nitrophenol	BDL	0.010	mg/l	8270C	09/15/11	1
4-Nitrophenol	BDL	0.010	mg/l	8270C	09/15/11	1
Pentachlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
Phenol	BDL	0.010	mg/l	8270C	09/15/11	1
2,4,6-Trichlorophenol	BDL	0.010	mg/l	8270C	09/15/11	1
Surrogate Recovery						
2-Fluorophenol	29.5	% Rec.	8270C	09/15/11	1	
Phenol-d5	22.5	% Rec.	8270C	09/15/11	1	
Nitrobenzene-d5	55.3	% Rec.	8270C	09/15/11	1	
2-Fluorobiphenyl	56.9	% Rec.	8270C	09/15/11	1	
2,4,6-Tribromophenol	62.4	% Rec.	8270C	09/15/11	1	
p-Terphenyl-d14	68.1	% Rec.	8270C	09/15/11	1	

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/19/11 15:23 Printed: 09/19/11 15:24



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REPORT OF ANALYSIS

September 19, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 10, 2011
Description : EnCana Pavillion
Sample ID : SB-1-11/TP-14-12
Collected By : Dawn Fairchild
Collection Date : 09/09/11 08:05

ESC Sample # : L535398-03

Site ID : PAVILLION
Project # : 60196941

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	GRO	09/10/11	1
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	95.6		% Rec.	GRO	09/10/11	1
Benzene	BDL	0.0010	mg/l	8260B	09/11/11	1
Toluene	BDL	0.0050	mg/l	8260B	09/11/11	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/11/11	1
Total Xylenes	BDL	0.0030	mg/l	8260B	09/11/11	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	09/11/11	1
Dibromofluoromethane	107.		% Rec.	8260B	09/11/11	1
a,a,a-Trifluorotoluene	98.5		% Rec.	8260B	09/11/11	1
4-Bromofluorobenzene	93.5		% Rec.	8260B	09/11/11	1
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	0.36	0.10	mg/l	8015	09/14/11	1
Surrogate recovery(%)						
o-Terphenyl	101.		% Rec.	8015	09/14/11	1
Base/Neutral Extractables						
Acenaphthene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Acenaphthylene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Anthracene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Benzidine	BDL	0.011	mg/l	8270C	09/18/11	1.11
Benzo(a)anthracene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Benzo(b)fluoranthene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Benzo(k)fluoranthene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Benzo(g,h,i)perylene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Benzo(a)pyrene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Bis(2-chlorethoxy)methane	BDL	0.011	mg/l	8270C	09/18/11	1.11
Bis(2-chloroethyl)ether	BDL	0.011	mg/l	8270C	09/18/11	1.11
Bis(2-chloroisopropyl)ether	BDL	0.011	mg/l	8270C	09/18/11	1.11
4-Bromophenyl-phenylether	BDL	0.011	mg/l	8270C	09/18/11	1.11
2-Chloronaphthalene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
4-Chlorophenyl-phenylether	BDL	0.011	mg/l	8270C	09/18/11	1.11
Chrysene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Dibenz(a,h)anthracene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
3,3-Dichlorobenzidine	BDL	0.011	mg/l	8270C	09/18/11	1.11
2,4-Dinitrotoluene	BDL	0.011	mg/l	8270C	09/18/11	1.11
2,6-Dinitrotoluene	BDL	0.011	mg/l	8270C	09/18/11	1.11
Fluoranthene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Fluorene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Hexachlorobenzene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Hexachloro-1,3-butadiene	BDL	0.011	mg/l	8270C	09/18/11	1.11

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

September 19, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 10, 2011
Description : EnCana Pavillion
Sample ID : SB-1-11/TP-14-12
Collected By : Dawn Fairchild
Collection Date : 09/09/11 08:05

ESC Sample # : L535398-03

Site ID : PAVILLION
Project # : 60196941

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Hexachlorocyclopentadiene	BDL	0.011	mg/l	8270C	09/18/11	1.11
Hexachloroethane	BDL	0.011	mg/l	8270C	09/18/11	1.11
Indeno(1,2,3-cd)pyrene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Isophorone	BDL	0.011	mg/l	8270C	09/18/11	1.11
Naphthalene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Nitrobenzene	BDL	0.011	mg/l	8270C	09/18/11	1.11
n-Nitrosodimethylamine	BDL	0.011	mg/l	8270C	09/18/11	1.11
n-Nitrosodiphenylamine	BDL	0.011	mg/l	8270C	09/18/11	1.11
n-Nitrosodi-n-propylamine	BDL	0.011	mg/l	8270C	09/18/11	1.11
Phenanthrene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Benzylbutyl phthalate	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Bis(2-ethylhexyl)phthalate	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Di-n-butyl phthalate	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Diethyl phthalate	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Dimethyl phthalate	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Di-n-octyl phthalate	BDL	0.0011	mg/l	8270C	09/18/11	1.11
Pyrene	BDL	0.0011	mg/l	8270C	09/18/11	1.11
1,2,4-Trichlorobenzene	BDL	0.011	mg/l	8270C	09/18/11	1.11
Acid Extractables						
4-Chloro-3-methylphenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
2-Chlorophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
2,4-Dichlorophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
2,4-Dimethylphenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
4,6-Dinitro-2-methylphenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
2,4-Dinitrophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
2-Nitrophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
4-Nitrophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
Pentachlorophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
Phenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
2,4,6-Trichlorophenol	BDL	0.011	mg/l	8270C	09/18/11	1.11
Surrogate Recovery						
2-Fluorophenol	36.8	% Rec.	8270C	09/18/11	1.11	
Phenol-d5	26.0	% Rec.	8270C	09/18/11	1.11	
Nitrobenzene-d5	69.6	% Rec.	8270C	09/18/11	1.11	
2-Fluorobiphenyl	68.0	% Rec.	8270C	09/18/11	1.11	
2,4,6-Tribromophenol	57.2	% Rec.	8270C	09/18/11	1.11	
p-Terphenyl-d14	71.0	% Rec.	8270C	09/18/11	1.11	

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 09/19/11 15:23 Printed: 09/19/11 15:24

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L535398-01	WG554605	SAMP	o-Terphenyl	R1858592	J7
L535398-02	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
L535398-04	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
L535398-05	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
L535398-06	WG555370	SAMP	o-Terphenyl	R1861012	J1
L535398-07	WG555165	SAMP	Ferrous Iron	R1861275	T8
L535398-08	WG555187	SAMP	2-Chlorophenol	R1860474	J3
	WG555187	SAMP	Pentachlorophenol	R1860474	J3
	WG554909	SAMP	Chloromethane	R1857732	J4
	WG554909	SAMP	1,2-Dichlorobenzene	R1857732	J4
	WG554909	SAMP	Styrene	R1857732	J4
	WG554909	SAMP	Vinyl chloride	R1857732	J4

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
09/19/11 at 15:24:20

TSR Signing Reports: 044
R5 - Desired TAT

Always run BTEX by 8260 unless noted otherwise. In 9/2/11

Sample: L535398-01 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-02 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-03 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-04 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-05 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-06 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-07 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23
Sample: L535398-08 Account: ENSRFCCO Received: 09/10/11 11:30 Due Date: 09/16/11 00:00 RPT Date: 09/19/11 15:23



L A B S C I E N C E S

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Result	Laboratory Blank Units	% Rec.	Limit	Batch	Date Analyzed
Nitrate	< .1	mg/l			WG554558	09/10/11 21:08
TPH (GC/FID) Low Fraction	< .1	mg/l			WG554541	09/10/11 19:58
a,a,a-Trifluorotoluene(FID)		% Rec.	94.41	62-128	WG554541	09/10/11 19:58
Benzene	< .001	mg/l			WG554548	09/11/11 10:00
Ethylbenzene	< .001	mg/l			WG554548	09/11/11 10:00
Toluene	< .005	mg/l			WG554548	09/11/11 10:00
Total Xylenes	< .003	mg/l			WG554548	09/11/11 10:00
4-Bromofluorobenzene		% Rec.	90.90	82-120	WG554548	09/11/11 10:00
Dibromofluoromethane		% Rec.	108.2	82-126	WG554549	09/11/11 10:00
Toluene-d8		% Rec.	104.2	92-112	WG554548	09/11/11 10:00
a,a,a-Trifluorotoluene		% Rec.	99.72	90-116	WG554548	09/11/11 10:00
TPH (GC/FID) Low Fraction	< .1	mg/l			WG554738	09/12/11 16:11
a,a,a-Trifluorotoluene(FID)		% Rec.	103.9	62-128	WG554738	09/12/11 16:11
TPH (GC/FID) Low Fraction	< .1	mg/l			WG554885	09/13/11 16:03
a,a,a-Trifluorotoluene(FID)		% Rec.	97.29	62-128	WG554885	09/13/11 16:03
Benzene	< .001	mg/l			WG554911	09/13/11 12:58
Ethylbenzene	< .001	mg/l			WG554911	09/13/11 12:58
Toluene	< .005	mg/l			WG554911	09/13/11 12:58
Total Xylenes	< .003	mg/l			WG554911	09/13/11 12:58
4-Bromofluorobenzene		% Rec.	114.6	82-120	WG554911	09/13/11 12:58
Dibromofluoromethane		% Rec.	103.9	82-126	WG554911	09/13/11 12:58
Toluene-d8		% Rec.	103.5	92-112	WG554911	09/13/11 12:58
a,a,a-Trifluorotoluene		% Rec.	109.6	90-116	WG554911	09/13/11 12:58
1,1,1,2-Tetrachloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,1-Trichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,2,2-Tetrachloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,2-Trichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1,2-Trichloro-1,2,2-trifluoroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1-Dichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,1-Dichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
1,1-Dichloropropene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,3-Trichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,3-Trichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
1,2,3-Trimethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2,4-Trimethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dibromo-3-Chloropropane	< .005	mg/l			WG554909	09/13/11 13:07
1,2-Dibromoethane	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dichloroethane	< .001	mg/l			WG554909	09/13/11 13:07
1,2-Dichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
1,3,5-Trimethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,3-Dichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
1,3-Dichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
1,4-Dichlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
2,2-Dichloropropane	< .001	mg/l			WG554909	09/13/11 13:07
2-Butanone (MEK)	< .01	mg/l			WG554909	09/13/11 13:07

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
2-Chloroethyl vinyl ether	< .05	mg/l			WG554909	09/13/11 13:07
2-Chlorotoluene	< .001	mg/l			WG554909	09/13/11 13:07
4-Chlorotoluene	< .001	mg/l			WG554909	09/13/11 13:07
4-Methyl-2-pentaone (MIBK)	< .01	mg/l			WG554909	09/13/11 13:07
Acetone	< .05	mg/l			WG554909	09/13/11 13:07
Acrylonitrile	< .01	mg/l			WG554909	09/13/11 13:07
Benzene	< .001	mg/l			WG554909	09/13/11 13:07
Bromobenzene	< .001	mg/l			WG554909	09/13/11 13:07
Bromodichloromethane	< .001	mg/l			WG554909	09/13/11 13:07
Bromoform	< .001	mg/l			WG554909	09/13/11 13:07
Bromomethane	< .005	mg/l			WG554909	09/13/11 13:07
Carbon tetrachloride	< .001	mg/l			WG554909	09/13/11 13:07
Chlorobenzene	< .001	mg/l			WG554909	09/13/11 13:07
Chlorodibromomethane	< .001	mg/l			WG554909	09/13/11 13:07
Chloroethane	< .005	mg/l			WG554909	09/13/11 13:07
Chloroform	< .005	mg/l			WG554909	09/13/11 13:07
Chloromethane	< .0025	mg/l			WG554909	09/13/11 13:07
cis-1,2-Dichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
cis-1,3-Dichloropropene	< .001	mg/l			WG554909	09/13/11 13:07
Di-isopropyl ether	< .001	mg/l			WG554909	09/13/11 13:07
Dibromomethane	< .001	mg/l			WG554909	09/13/11 13:07
Dichlorodifluoromethane	< .005	mg/l			WG554909	09/13/11 13:07
Ethylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Hexachloro-1,3-butadiene	< .001	mg/l			WG554909	09/13/11 13:07
Isopropylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Methyl tert-butyl ether	< .001	mg/l			WG554909	09/13/11 13:07
Methylene Chloride	< .005	mg/l			WG554909	09/13/11 13:07
n-Butylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
n-Propylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Naphthalene	< .005	mg/l			WG554909	09/13/11 13:07
p-Isopropyltoluene	< .001	mg/l			WG554909	09/13/11 13:07
sec-Butylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Styrene	< .001	mg/l			WG554909	09/13/11 13:07
tert-Butylbenzene	< .001	mg/l			WG554909	09/13/11 13:07
Tetrachloroethene	< .001	mg/l			WG554909	09/13/11 13:07
Toluene	< .005	mg/l			WG554909	09/13/11 13:07
trans-1,2-Dichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
trans-1,3-Dichloropropene	< .001	mg/l			WG554909	09/13/11 13:07
Trichloroethene	< .001	mg/l			WG554909	09/13/11 13:07
Trichlorofluoromethane	< .005	mg/l			WG554909	09/13/11 13:07
Vinyl chloride	< .001	mg/l			WG554909	09/13/11 13:07
Xylenes, Total	< .003	mg/l			WG554909	09/13/11 13:07
4-Bromofluorobenzene	% Rec.	104.5		82-120	WG554909	09/13/11 13:07
Dibromofluoromethane	% Rec.	97.14		82-126	WG554909	09/13/11 13:07
Toluene-d8	% Rec.	102.2		92-112	WG554909	09/13/11 13:07
TPH (GC/FID) High Fraction	< .1	ppm			WG554605	09/14/11 19:49
o-Terphenyl	% Rec.	102.8		50-150	WG554605	09/14/11 19:49
TPH (GC/FID) High Fraction	< .1	ppm			WG554921	09/14/11 14:18
o-Terphenyl	% Rec.	102.7		50-150	WG554921	09/14/11 14:18
Sulfate	< 5	mg/l			WG555298	09/15/11 07:07
Acrolein	< .025	mg/l			WG555253	09/15/11 13:47

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Result	Laboratory Blank Units	% Rec	Limit	Batch	Date Analyzed
4-Bromofluorobenzene	< .01	% Rec.	109.5	82-120		09/15/11 13:47
Dibromofluoromethane		% Rec.	95.97	82-126		09/15/11 13:47
Toluene-d8		% Rec.	101.8	92-112		09/15/11 13:47
1,2,4-Trichlorobenzene	< .01	mg/l			WG555187	09/15/11 12:53
2,4,5-Trichlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4,6-Trichlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dichlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dimethylphenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dinitrophenol	< .01	mg/l			WG555187	09/15/11 12:53
2,4-Dinitrotoluene	< .01	mg/l			WG555187	09/15/11 12:53
2,6-Dinitrotoluene	< .01	mg/l			WG555187	09/15/11 12:53
2-Chloronaphthalene	< .001	mg/l			WG555187	09/15/11 12:53
2-Chlorophenol	< .01	mg/l			WG555187	09/15/11 12:53
2-Methylphenol	< .01	mg/l			WG555187	09/15/11 12:53
2-Nitrophenol	< .01	mg/l			WG555187	09/15/11 12:53
3&4-methyl phenol	< .01	mg/l			WG555187	09/15/11 12:53
3,3-Dichlorobenzidine	< .01	mg/l			WG555187	09/15/11 12:53
4,6-Dinitro-2-methylphenol	< .01	mg/l			WG555187	09/15/11 12:53
4-Bromophenyl-phenylether	< .01	mg/l			WG555187	09/15/11 12:53
4-Chloro-3-methylphenol	< .01	mg/l			WG555187	09/15/11 12:53
4-Chlorophenyl-phenylether	< .01	mg/l			WG555187	09/15/11 12:53
4-Nitrophenol	< .01	mg/l			WG555187	09/15/11 12:53
Acenaphthene	< .001	mg/l			WG555187	09/15/11 12:53
Acenaphthylene	< .001	mg/l			WG555107	09/15/11 12:53
Anthracene	< .001	mg/l			WG555187	09/15/11 12:53
Benzidine	< .01	mg/l			WG555187	09/15/11 12:53
Benzo(a)anthracene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(a)pyrene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(b)fluoranthene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(g,h,i)perylene	< .001	mg/l			WG555187	09/15/11 12:53
Benzo(k)fluoranthene	< .001	mg/l			WG555187	09/15/11 12:53
Benzylbutyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Bis(2-chloroethoxy)methane	< .01	mg/l			WG555187	09/15/11 12:53
Bis(2-chloroethyl)ether	< .01	mg/l			WG555187	09/15/11 12:53
Bis(2-chloroisopropyl)ether	< .01	mg/l			WG555187	09/15/11 12:53
Bis(2-ethylhexyl)phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Chrysene	< .001	mg/l			WG555187	09/15/11 12:53
Di-n-butyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Di-n-octyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Dibenzo(a,n)anthracene	< .001	mg/l			WG555187	09/15/11 12:53
Dibenzofuran	< .01	mg/l			WG555187	09/15/11 12:53
Diethyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Dimethyl phthalate	< .001	mg/l			WG555187	09/15/11 12:53
Fluoranthene	< .001	mg/l			WG555187	09/15/11 12:53
Fluorene	< .001	mg/l			WG555187	09/15/11 12:53
Hexachloro-1,3-butadiene	< .01	mg/l			WG555187	09/15/11 12:53
Hexachlorobenzene	< .001	mg/l			WG555187	09/15/11 12:53
Hexachlorocyclopentadiene	< .01	mg/l			WG555187	09/15/11 12:53
Hexachloroethane	< .01	mg/l			WG555187	09/15/11 12:53
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG555187	09/15/11 12:53
Isophorone	< .01	mg/l			WG555187	09/15/11 12:53
n-Nitrosodi-n-propylamine	< .01	mg/l			WG555187	09/15/11 12:53
n-Nitrosodimethylamine	< .01	mg/l			WG555187	09/15/11 12:53
n-Nitrosodiphenylamine	< .01	mg/l			WG555187	09/15/11 12:53
Naphthalene	< .001	mg/l			WG555187	09/15/11 12:53
Nitrobenzene	< .01	mg/l			WG555187	09/15/11 12:53
Pentachlorophenol	< .001	mg/l			WG555187	09/15/11 12:53
Phenanthrene	< .001	mg/l			WG555187	09/15/11 12:53
Phenol	< .01	mg/l			WG555187	09/15/11 12:53

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Est. 1970

Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Result	Laboratory Blank			Batch	Date Analyzed
		Units	% Rec	Limit		
Pyrene	<.001	mg/l			WG555187	09/15/11 12:53
Pyridine	<.01	mg/l			WG555187	09/15/11 12:53
2,4,6-Tribromophenol		mg/l	74.01	16-147	WG555187	09/15/11 12:53
2-Fluorobiphenyl		mg/l	73.01	29-127	WG555187	09/15/11 12:53
2-Fluorophenol		mg/l	41.76	10-75	WG555187	09/15/11 12:53
Nitrobenzene-d5		mg/l	63.41	17-119	WG555187	09/15/11 12:53
Phenol-d5		mg/l	29.89	10-63	WG555187	09/15/11 12:53
p-Terphenyl-d14		mg/l	98.42	40-174	WG555187	09/15/11 12:53
TPH (GC/FID) High Fraction	<.1	ppm			WG555370	09/16/11 09:27
c-Terphenyl		% Rec.	92.92	50-150	WG555370	09/16/11 09:27
Ferrous Iron	<.05	mg/l			WG555165	09/16/11 13:20
1,2,4-Trichlorobenzene	<.01	mg/l			WG555542	09/18/11 09:56
2,4,6-Trichlorophenol	<.01	mg/l			WG555542	09/18/11 09:56
2,4-Dichlorophenol	<.01	mg/l			WG555542	09/18/11 09:56
2,4-Dimethylphenol	<.01	mg/l			WG555542	09/18/11 09:56
2,4-Dinitrophenol	<.01	mg/l			WG555542	09/18/11 09:56
2,4-Dinitrotoluene	<.01	mg/l			WG555542	09/18/11 09:56
2,6-Dinitrotoluene	<.01	mg/l			WG555542	09/18/11 09:56
2-Chloronaphthalene	<.001	mg/l			WG555542	09/18/11 09:56
2-Chlorophenol	<.01	mg/l			WG555542	09/18/11 09:56
2-Nitrophenol	<.01	mg/l			WG555542	09/18/11 09:56
3,3-Dichlorobenzidine	<.01	mg/l			WG555542	09/18/11 09:56
4,6-Dinitro-2-methylphenol	<.01	mg/l			WG555542	09/18/11 09:56
4-Bromophenyl-phenylether	<.01	mg/l			WG555542	09/18/11 09:56
4-Chloro-3-methylphenol	<.01	mg/l			WG555542	09/18/11 09:56
4-Chlorophenyl-phenylether	<.01	mg/l			WG555542	09/18/11 09:56
4-Nitrophenol	<.01	mg/l			WG555542	09/18/11 09:56
Acenaphthene	<.001	mg/l			WG555542	09/18/11 09:56
Acenaphthylene	<.001	mg/l			WG555542	09/18/11 09:56
Anthracene	<.001	mg/l			WG555542	09/18/11 09:56
Benzidine	<.01	mg/l			WG555542	09/18/11 09:56
Benzo(a)anthracene	<.001	mg/l			WG555542	09/18/11 09:56
Benzo(a)pyrene	<.001	mg/l			WG555542	09/18/11 09:56
Benzo(b)fluoranthene	<.001	mg/l			WG555542	09/18/11 09:56
Benzo(g,h,i)perylene	<.001	mg/l			WG555542	09/18/11 09:56
Benzo(k)fluoranthene	<.001	mg/l			WG555542	09/18/11 09:56
Benzylbutyl phthalate	<.001	mg/l			WG555542	09/18/11 09:56
Bis(2-chlorethoxy)methane	<.01	mg/l			WG555542	09/18/11 09:56
Bis(2-chloroethyl)ether	<.01	mg/l			WG555542	09/18/11 09:56
Bis(2-chloroisopropyl)ether	<.01	mg/l			WG555542	09/18/11 09:56
Bis(2-ethylhexyl)phthalate	<.001	mg/l			WG555542	09/18/11 09:56
Chrysene	<.001	mg/l			WG555542	09/18/11 09:56
Di-n-butyl phthalate	<.001	mg/l			WG555542	09/18/11 09:56
Di-n-octyl phthalate	<.001	mg/l			WG555542	09/18/11 09:56
Dibenz(a,h)anthracene	<.001	mg/l			WG555542	09/18/11 09:56
Diethyl phthalate	<.001	mg/l			WG555542	09/18/11 09:56
Dimethyl phthalate	<.001	mg/l			WG555542	09/18/11 09:56
Fluoranthene	<.001	mg/l			WG555542	09/18/11 09:56
Fluorene	<.001	mg/l			WG555542	09/18/11 09:56
Hexachloro-1,3-butadiene	<.01	mg/l			WG555542	09/18/11 09:56
Hexachlorobenzene	<.001	mg/l			WG555542	09/18/11 09:56
Hexachlorocyclopentadiene	<.01	mg/l			WG555542	09/18/11 09:56
Hexachloroethane	<.01	mg/l			WG555542	09/18/11 09:56

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Analyte	Result	Laboratory Units	Blank % Rec	Limit	Batch	Date Analyzed
Indeno(1,2,3-cd)pyrene	< .001	mg/l			WG555542	09/18/11 09:56
Isophorone	< .01	mg/l			WG555542	09/18/11 09:56
n-Nitrosodi-n-propylamine	< .01	mg/l			WG555542	09/18/11 09:56
n-Nitrosodimethylamine	< .01	mg/l			WG555542	09/18/11 09:56
n-Nitrosodiphenylamine	< .01	mg/l			WG555542	09/18/11 09:56
Naphthalene	< .001	mg/l			WG555542	09/18/11 09:56
Nitrobenzene	< .01	mg/l			WG555542	09/18/11 09:56
Pentachlorophenol	< .001	mg/l			WG555542	09/18/11 09:56
Phenanthenrene	< .001	mg/l			WG555542	09/18/11 09:56
Phenol	< .01	mg/l			WG555542	09/18/11 09:56
Pyrene	< .001	mg/l			WG555542	09/18/11 09:56
2,4,6-Tribromophenol		mg/l	54.08	16-147	WG555542	09/18/11 09:56
2-Fluorobiphenyl		mg/l	64.30	29-127	WG555542	09/18/11 09:56
2-Fluorophenol		mg/l	20.82	10-75	WG555542	09/18/11 09:56
Nitrobenzene-d5		mg/l	64.36	17-119	WG555542	09/18/11 09:56
Phenol-d5		mg/l	14.47	10-63	WG555542	09/18/11 09:56
p-Terphenyl-d14		mg/l	86.17	40-174	WG555542	09/18/11 09:56

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Nitrate	mg/l	0	0	0	20	L534841-03	WG554558
Nitrate	mg/l	0	0	0	20	L535379-18	WG554558
Sulfate	mg/l	180.	180.	1.65	20	L535392-02	WG555298
Sulfate	mg/l	0	0	0	20	L535415-06	WG555298
Ferrous Iron	mg/l	0.500	0.450	10.9	20	L536199-06	WG555165

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Nitrate	mg/l	8	8.00	100.	90-110	WG554558
TPH (GC/FID) Low Fraction	mg/l	5.5	5.71	104.	70-124	WG554541
a,a,a-Trifluorotoluene(FID)				98.95	62-128	WG554541
Benzene	mg/l	.025	0.0262	105.	72-119	WG554548
Ethylbenzene	mg/l	.025	0.0235	94.1	77-124	WG554548
Toluene	mg/l	.025	0.0244	97.7	75-114	WG554548
Total Xylenes	mg/l	.075	0.0706	94.1	77-123	WG554548
4-Bromofluorobenzene				92.43	82-120	WG554548
Dibromofluoromethane				111.0	82-126	WG554548
Toluene-d8				104.0	92-112	WG554548
a,a,a-Trifluorotoluene				96.38	90-116	WG554548
TPH (GC/FID) Low Fraction	mg/l	5.5	5.93	108.	70-124	WG554738
a,a,a-Trifluorotoluene(FID)				110.5	62-128	WG554738
TPH (GC/FID) Low Fraction	mg/l	5.5	6.39	116.	70-124	WG554885
a,a,a-Trifluorotoluene(FID)				113.5	62-128	WG554885

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Benzene	mg/l	.025	0.0227	90.8	72-119	WG554911
Ethylbenzene	mg/l	.025	0.0251	100.	77-124	WG554911
Toluene	mg/l	.025	0.0236	94.3	75-114	WG554911
Total Xylenes	mg/l	.075	0.0772	103.	77-123	WG554911
4-Bromofluorobenzene				110.3	82-120	WG554911
Dibromofluoromethane				103.2	82-126	WG554911
Toluene-d8				105.0	92-112	WG554911
a,a,a-Trifluorotoluene				111.6	90-116	WG554911
1,1,1,2-Tetrachloroethane	mg/l	.025	0.0236	94.3	77-128	WG554909
1,1,1-Trichloroethane	mg/l	.025	0.0231	92.4	71-126	WG554909
1,1,2,2-Tetrachloroethane	mg/l	.025	0.0211	84.6	78-130	WG554909
1,1,2-Trichloroethane	mg/l	.025	0.0228	91.4	81-121	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	.025	0.0233	93.2	53-143	WG554909
1,1-Dichloroethane	mg/l	.025	0.0220	87.8	73-123	WG554909
1,1-Dichloroethylene	mg/l	.025	0.0225	89.9	54-134	WG554909
1,1-Dichloropropene	mg/l	.025	0.0179	71.4	67-127	WG554909
1,2,3-Trichlorobenzene	mg/l	.025	0.0201	80.3	77-130	WG554909
1,2,3-Trichloropropane	mg/l	.025	0.0216	86.6	68-130	WG554909
1,2,3-Trimethylbenzene	mg/l	.025	0.0202	80.8	70-127	WG554909
1,2,4-Trichlorobenzene	mg/l	.025	0.0203	81.0	76-127	WG554909
1,2,4-Trimethylbenzene	mg/l	.025	0.0213	85.4	77-129	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	.025	0.0157	62.7	55-142	WG554909
1,2-Dibromoethane	mg/l	.025	0.0207	83.0	78-124	WG554909
1,2-Dichlorobenzene	mg/l	.025	0.0206	82.4	82-121	WG554909
1,2-Dichloroethane	mg/l	.025	0.0208	83.3	69-128	WG554909
1,2-Dichloropropene	mg/l	.025	0.0214	85.8	77-121	WG554909
1,3,5-Trimethylbenzene	mg/l	.025	0.0219	87.7	78-127	WG554909
1,3-Dichlorobenzene	mg/l	.025	0.0219	87.5	77-127	WG554909
1,3-Dichloropropane	mg/l	.025	0.0209	83.7	78-117	WG554909
1,4-Dichlorobenzene	mg/l	.025	0.0212	84.9	79-117	WG554909
2,2-Dichloropropane	mg/l	.025	0.0226	90.5	63-130	WG554909
2-Butanone (MEK)	mg/l	.125	0.0790	63.2	58-144	WG554909
2-Chloroethyl vinyl ether	mg/l	.125	0.105	83.8	26-172	WG554909
2-Chlorotoluene	mg/l	.025	0.0217	86.7	78-123	WG554909
4-Chlorotoluene	mg/l	.025	0.0217	86.9	78-122	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	.125	0.102	82.0	58-147	WG554909
Acetone	mg/l	.125	0.0703	56.3	49-153	WG554909
Acrylonitrile	mg/l	.125	0.0803	64.2	53-153	WG554909
Benzene	mg/l	.025	0.0195	77.9	72-119	WG554909
Bromobenzene	mg/l	.025	0.0209	83.8	76-121	WG554909
Bromodichloromethane	mg/l	.025	0.0228	91.3	75-127	WG554909
Bromoform	mg/l	.025	0.0188	75.1	61-136	WG554909
Bromomethane	mg/l	.025	0.0219	87.5	42-172	WG554909
Carbon tetrachloride	mg/l	.025	0.0210	83.9	63-129	WG554909
Chlorobenzene	mg/l	.025	0.0216	86.3	78-123	WG554909
Chlorodibromomethane	mg/l	.025	0.0234	93.6	73-128	WG554909
Chloroethane	mg/l	.025	0.0209	83.5	52-164	WG554909
Chloroform	mg/l	.025	0.0237	94.7	76-122	WG554909
Chloromethane	mg/l	.025	0.0129	51.8	50-141	WG554909
cis-1,2-Dichloroethene	mg/l	.025	0.0207	82.7	75-121	WG554909
cis-1,3-Dichloropropene	mg/l	.025	0.0220	87.8	74-124	WG554909
Di-isopropyl ether	mg/l	.025	0.0214	85.5	66-129	WG554909
Dibromomethane	mg/l	.025	0.0205	82.0	77-124	WG554909
Dichlorodifluoromethane	mg/l	.025	0.0162	64.6	33-173	WG554909
Ethylbenzene	mg/l	.025	0.0211	84.2	77-124	WG554909
Hexachloro-1,3-butadiene	mg/l	.025	0.0190	76.2	71-134	WG554909
Isopropylbenzene	mg/l	.025	0.0239	95.8	74-126	WG554909

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Analyte	Units	Laboratory Known Val	Control Sample Result	% Rec	Limit	Batch
Methyl tert-butyl ether	mg/l	.025	0.0221	88.4	67-127	WG554909
Methylene Chloride	mg/l	.025	0.0215	85.9	67-122	WG554909
n-Butylbenzene	mg/l	.025	0.0209	83.6	74-130	WG554909
n-Propylbenzene	mg/l	.025	0.0219	87.7	77-125	WG554909
Naphthalene	mg/l	.025	0.0191	76.5	70-134	WG554909
p-Isopropyltoluene	mg/l	.025	0.0221	88.6	77-132	WG554909
sec-Butylbenzene	mg/l	.025	0.0222	86.7	77-130	WG554909
Styrene	mg/l	.025	0.0156	62.6*	69-145	WG554909
tert-Butylbenzene	mg/l	.025	0.0223	89.1	76-131	WG554909
Tetrachloroethene	mg/l	.025	0.0193	77.1	75-121	WG554909
Toluene	mg/l	.025	0.0209	83.5	75-114	WG554909
trans-1,2-Dichloroethene	mg/l	.025	0.0174	69.5	63-127	WG554909
trans-1,3-Dichloropropene	mg/l	.025	0.0198	79.2	69-124	WG554909
Trichloroethene	mg/l	.025	0.0194	77.8	69-131	WG554909
Trichlorofluoromethane	mg/l	.025	0.0206	82.4	53-161	WG554909
Vinyl chloride	mg/l	.025	0.0140	56.1	55-142	WG554909
Xylenes, Total	mg/l	.075	0.0628	83.8	77-123	WG554909
4-Bromofluorobenzene				100.3	82-120	WG554909
Dibromofluoromethane				100.6	82-126	WG554909
Toluene-d8				104.0	92-112	WG554909
Sulfate	mg/l	40	39.9	99.8	90-110	WG555298
Acrolein	mg/l	.125	0.0302	24.1	10-181	WG555253
4-Bromofluorobenzene				106.1	82-120	WG555253
Dibromofluoromethane				100.4	82-126	WG555253
Toluene-d8				104.6	92-112	WG555253
1,2,4-Trichlorobenzene	mg/l	.01	0.00602	60.2	34-97	WG555187
2,4,5-Trichlorophenol	mg/l	.01	0.00663	66.3	41-125	WG555187
2,4,6-Trichlorophenol	mg/l	.01	0.00659	65.9	38-113	WG555187
2,4-Dichlorophenol	mg/l	.01	0.00673	67.3	46-105	WG555187
2,4-Dimethylphenol	mg/l	.01	0.00675	67.5	47-108	WG555187
2,4-Dinitrophenol	mg/l	.01	0.00564	56.4	10-121	WG555187
2,4-Dinitrotoluene	mg/l	.01	0.00841	84.1	59-117	WG555187
2,6-Dinitrotoluene	mg/l	.01	0.00751	75.1	57-110	WG555187
2-Chloronaphthalene	mg/l	.01	0.00708	70.8	47-106	WG555187
2-Chlorophenol	mg/l	.01	0.00678	67.8	37-90	WG555187
2-Methylphenol	mg/l	.01	0.00569	56.9	35-84	WG555187
2-Nitrophenol	mg/l	.01	0.00660	66.0	40-112	WG555187
3&4-methyl phenol	mg/l	.01	0.00573	57.3	33-94	WG555187
3,3-Dichlorobenzidine	mg/l	.01	0.00637	63.7	58-116	WG555187
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00756	75.6	21-119	WG555187
4-Bromophenyl-phenylether	mg/l	.01	0.00741	74.1	63-120	WG555187
4-Chloro-3-methylphenol	mg/l	.01	0.00652	65.2	50-105	WG555187
4-Chlorophenyl-phenylether	mg/l	.01	0.00703	70.3	58-115	WG555187
4-Nitrophenol	mg/l	.01	0.00273	27.3	10-53	WG555187
Acenaphthene	mg/l	.01	0.00728	72.8	52-107	WG555187
Acenaphthylene	mg/l	.01	0.00773	77.3	55-119	WG555187
Anthracene	mg/l	.01	0.00822	82.2	65-114	WG555187
Benzidine	mg/l	.01	0.00191	19.1	10-55	WG555187
Benzo(a)anthracene	mg/l	.01	0.00867	86.7	68-113	WG555187
Benzo(a)pyrene	mg/l	.01	0.00784	78.4	68-115	WG555187
Benzo(b)fluoranthene	mg/l	.01	0.00766	76.6	67-114	WG555187
Benzo(g,h,i)perylene	mg/l	.01	0.00885	88.5	52-132	WG555187
Benzo(k)fluoranthene	mg/l	.01	0.00845	84.5	62-116	WG555187

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September 19, 2011

Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Benzylbutyl phthalate	mg/l	.01	0.00778	77.8	12-166	WG555187
Bis(2-chloroethoxy)methane	mg/l	.01	0.00673	67.3	56-116	WG555187
Bis(2-chloroethyl)ether	mg/l	.01	0.00656	65.6	39-109	WG555187
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00658	65.8	43-108	WG555187
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00935	93.5	61-147	WG555187
Chrysene	mg/l	.01	0.00819	81.9	65-114	WG555187
Di-n-butyl phthalate	mg/l	.01	0.00807	80.7	56-133	WG555187
Di-n-octyl phthalate	mg/l	.01	0.00923	92.3	59-143	WG555187
Dibenz(a,h)anthracene	mg/l	.01	0.00825	82.5	54-130	WG555187
Dibenzofuran	mg/l	.01	0.00716	71.6	53-109	WG555187
Diethyl phthalate	mg/l	.01	0.00748	74.8	33-136	WG555187
Dimethyl phthalate	mg/l	.01	0.00567	56.7	10-152	WG555187
Fluoranthene	mg/l	.01	0.00851	85.1	66-120	WG555187
Fluorene	mg/l	.01	0.00704	70.4	58-110	WG555187
Hexachloro-1,3-butadiene	mg/l	.01	0.00706	70.6	34-115	WG555187
Hexachlorobenzene	mg/l	.01	0.00680	68.0	55-117	WG555187
Hexachlorocyclopentadiene	mg/l	.01	0.00940	94.0	20-121	WG555187
Hexachloroethane	mg/l	.01	0.00665	66.5	24-93	WG555187
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00832	83.2	56-129	WG555187
Iso phorone	mg/l	.01	0.00587	58.7	55-108	WG555187
n-Nitrosodi-n-propylamine	mg/l	.01	0.00753	75.3	50-115	WG555187
n-Nitrosodimethylamine	mg/l	.01	0.00449	44.9	12-68	WG555187
n-Nitrosodiphenylamine	mg/l	.01	0.00747	74.7	55-98	WG555187
Naphthalene	mg/l	.01	0.00641	64.1	42-103	WG555187
Nitrobenzene	mg/l	.01	0.00663	66.3	39-102	WG555187
Pentachlorophenol	mg/l	.01	0.00581	58.1	10-101	WG555187
Phenanthrene	mg/l	.01	0.00777	77.7	61-110	WG555187
Phenol	mg/l	.01	0.00266	26.6	10-53	WG555187
Pyrene	mg/l	.01	0.00825	82.5	65-116	WG555187
Pyridine	mg/l	.01	0.00319	31.9	11-52	WG555187
2,4,6-Tribromophenol			75.86		16-147	WG555187
2-Fluorobiphenyl			71.71		29-127	WG555187
2-Fluorophenol			38.39		10-75	WG555187
Nitrobenzene-d5			63.33		17-119	WG555187
Phenol-d5			30.06		10-63	WG555187
p-Terphenyl-d14			85.31		40-174	WG555187
Ferrous Iron	mg/l	1	1.00	100.	85-115	WG555165
1,2,4-Trichlorobenzene	mc/l	.01	0.00596	59.6	34-97	WG555542
2,4,6-Trichlorophenol	mg/l	.01	0.00583	58.3	38-113	WG555542
2,4-Dichlorophenol	mg/l	.01	0.00665	66.5	46-105	WG555542
2,4-Dimethylphenol	mg/l	.01	0.00574	57.4	47-108	WG555542
2,4-Dinitrophenol	mg/l	.01	0.00397	39.7	10-121	WG555542
2,4-Dinitrotoluene	mg/l	.01	0.00787	78.7	59-117	WG555542
2,6-Dinitrotoluene	mg/l	.01	0.00800	80.0	57-110	WG555542
2-Chloronaphthalene	mg/l	.01	0.00700	70.0	47-106	WG555542
2-Chlorophenol	mg/l	.01	0.00521	52.1	37-90	WG555542
2-Nitrophenol	mg/l	.01	0.00670	67.0	40-112	WG555542
3,3-Dichlorobenzidine	mg/l	.01	0.00798	79.8	58-116	WG555542
4,6-Dinitro-2-methylphenol	mg/l	.01	0.00514	51.4	21-119	WG555542
4-Bromophenyl-phenylether	mg/l	.01	0.00744	74.4	63-120	WG555542
4-Chloro-3-methylphenol	mg/l	.01	0.00627	62.7	50-105	WG555542
4-Chlorophenyl-phenylether	mg/l	.01	0.00696	69.6	58-115	WG555542
4-Nitrophenol	mg/l	.01	0.00121	12.1	10-53	WG555542
Acenaphthene	mg/l	.01	0.00747	74.7	52-107	WG555542
Acenaphthylene	mg/l	.01	0.00758	75.8	55-119	WG555542

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Quality Assurance Report
Level II

L535398

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Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Anthracene	mg/l	.01	0.00750	75.0	65-114	WG555542
Benzidine	mg/l	.01	0.00361	36.1	10-55	WG555542
Benzo(a)anthracene	mg/l	.01	0.00811	81.1	68-113	WG555542
Benzo(a)pyrene	mg/l	.01	0.00812	81.2	68-115	WG555542
Benzo(b)fluoranthene	mg/l	.01	0.00785	78.5	67-114	WG555542
Benzo(g,h,i)perylene	mg/l	.01	0.00773	77.3	52-132	WG555542
Benzo(k)fluoranthene	mg/l	.01	0.00832	83.2	62-116	WG555542
Benzylbutyl phthalate	mg/l	.01	0.00664	66.4	12-166	WG555542
Bis(2-chloroethoxy)methane	mg/l	.01	0.00772	77.2	56-116	WG555542
Bis(2-chloroethyl)ether	mg/l	.01	0.00678	67.8	39-109	WG555542
Bis(2-chloroisopropyl)ether	mg/l	.01	0.00692	69.2	43-108	WG555542
Bis(2-ethylhexyl)phthalate	mg/l	.01	0.00824	82.4	61-147	WG555542
Chrysene	mg/l	.01	0.00807	80.7	65-114	WG555542
Di-n-butyl phthalate	mg/l	.01	0.00729	72.9	56-133	WG555542
Di-n-octyl phthalate	mg/l	.01	0.00826	82.6	59-143	WG555542
Dibenz(a,h)anthracene	mg/l	.01	0.00771	77.1	54-130	WG555542
Diethyl phthalate	mg/l	.01	0.00695	69.5	33-136	WG555542
Dimethyl phthalate	mg/l	.01	0.00575	57.5	10-152	WG555542
Fluoranthene	mg/l	.01	0.00727	72.7	66-120	WG555542
Fluorene	mg/l	.01	0.00737	73.7	58-110	WG555542
Hexachloro-1,3-butadiene	mg/l	.01	0.00541	54.1	34-115	WG555542
Hexachlorobenzene	mg/l	.01	0.00659	65.9	55-117	WG555542
Hexachlorocyclopentadiene	mg/l	.01	0.00642	64.2	20-121	WG555542
Hexachloroethane	mg/l	.01	0.00546	54.6	24-93	WG555542
Indeno(1,2,3-cd)pyrene	mg/l	.01	0.00794	79.4	56-129	WG555542
Isophorone	mg/l	.01	0.00644	64.4	55-108	WG555542
n-Nitrosodi-n-propylamine	mg/l	.01	0.00775	77.5	50-115	WG555542
n-Nitrosodimethylamine	mg/l	.01	0.00376	37.6	12-68	WG555542
n-Nitrosodiphenylamine	mg/l	.01	0.00762	76.2	55-98	WG555542
Naphthalene	mg/l	.01	0.00678	67.8	42-103	WG555542
Nitrobenzene	mg/l	.01	0.00758	75.8	39-102	WG555542
Pentachlorophenol	mg/l	.01	0.00365	36.5	10-101	WG555542
Phenanthrene	mg/l	.01	0.00770	77.0	61-110	WG555542
Phenol	mg/l	.01	0.00224	22.4	10-53	WG555542
Pyrene	mg/l	.01	0.00779	77.9	65-116	WG555542
2,4,6-Tribromophenol				60.70	16-147	WG555542
2-Fluorobiphenyl				72.64	29-127	WG555542
2-Fluorophenol				29.96	10-75	WG555542
Nitrobenzene-d5				78.06	17-119	WG555542
Phenol-d5				20.73	10-63	WG555542
p-Terphenyl-d14				80.79	40-174	WG555542

Analyte	Units	Laboratory Result	Control Ref	Sample %Rec	Duplicate	Limit	RPD	Limit	Batch
Nitrate	mg/l	7.99	8.00	100.	90-110	0.125	20	20	WG554558
TPH (GC/FID) Low Fraction	mg/l	5.72	5.71	104.	70-124	0.0600	20	20	WG554541
<i>a,a,a-Trifluorotoluene(FID)</i>				98.74	62-128				WG554541
Benzene	mg/l	0.0267	0.0262	107.	72-119	2.04	20	20	WG554548
Ethylbenzene	mg/l	0.0251	0.0235	100.	77-124	6.43	20	20	WG554548
Toluene	mg/l	0.0253	0.0244	101.	75-114	3.33	20	20	WG554548
Total Xylenes	mg/l	0.0754	0.0706	100.	77-123	6.57	20	20	WG554548
4-Bromofluorobenzene				94.41	82-120				WG554548
Dibromofluoromethane				110.3	82-126				WG554548
Toluene-d8				106.6	92-112				WG554548

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Analyte	Units	Laboratory Result	Control Ref	%Rec	Sample Limit	Duplicate Limit	RPD	Limit	Batch
a,a,a-Trifluorotoluene	mg/l	6.18	5.93	98.77	90-116	70-124	4.05	20	WG554738
TPH (GC/FID) Low Fraction	mg/l	5.82	6.39	112.1	70-124	62-128	9.42	20	WG554738
a,a,a-Trifluorotoluene(FID)	mg/l	5.82	6.39	106.	70-124	62-128	9.42	20	WG554885
TPH (GC/FID) Low Fraction	mg/l	5.82	6.39	105.4	70-124	62-128	9.42	20	WG554885
a,a,a-Trifluorotoluene(FID)	mg/l	5.82	6.39	105.4	70-124	62-128	9.42	20	WG554885
Benzene	mg/l	0.0228	0.0227	91.0	72-119	0.230	2.65	20	WG554911
Ethylbenzene	mg/l	0.0251	0.0251	100.	77-124	0.180	2.38	20	WG554911
Toluene	mg/l	0.0239	0.0236	95.0	75-114	1.18	2.29	20	WG554911
Total Xylenes	mg/l	0.0760	0.0772	101.	77-123	1.61	2.29	20	WG554911
4-Bromofluorobenzene	mg/l			110.4	82-120				WG554911
Dibromofluoromethane	mg/l			101.2	82-126				WG554911
Toluene-d8	mg/l			103.7	92-112				WG554911
a,a,a-Trifluorotoluene	mg/l			108.6	90-116				WG554911
1,1,1,2-Tetrachloroethane	mg/l	0.0230	0.0236	92.0	77-128	2.65	2.65	20	WG554909
1,1,1-Trichloroethane	mg/l	0.0225	0.0231	90.0	71-126	2.38	2.38	20	WG554909
1,1,2,2-Tetrachloroethane	mg/l	0.0209	0.0211	84.0	78-130	0.980	2.29	20	WG554909
1,1,2-Trichloroethane	mg/l	0.0223	0.0228	89.0	81-121	2.29	2.29	20	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0223	0.0233	89.0	53-143	4.24	4.24	20	WG554909
1,1-Dichloroethane	mg/l	0.0214	0.0220	86.0	73-123	2.44	2.44	20	WG554909
1,1-Dichloroethene	mg/l	0.0221	0.0225	88.0	54-134	1.59	1.59	20	WG554909
1,1-Dichloropropene	mg/l	0.0174	0.0179	70.0	67-127	2.71	2.71	20	WG554909
1,2,3-Trichlorobenzene	mg/l	0.0195	0.0201	78.0	77-130	3.12	3.12	20	WG554909
1,2,3-Trichloropropane	mg/l	0.0218	0.0216	87.0	68-130	0.640	2.68	20	WG554909
1,2,3-Trimethylbenzene	mg/l	0.0197	0.0202	79.0	70-127	2.68	2.68	20	WG554909
1,2,4-Trichlorobenzene	mg/l	0.0200	0.0203	80.0	76-127	1.23	1.23	20	WG554909
1,2,4-Trimethylbenzene	mg/l	0.0207	0.0213	83.0	77-129	2.96	2.96	20	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	0.0163	0.0157	65.0	55-142	3.70	3.70	20	WG554909
1,2-Dibromoethane	mg/l	0.0206	0.0207	82.0	78-124	0.800	0.800	20	WG554909
1,2-Dichlorobenzene	mg/l	0.0205	0.0206	82.0	82-121	0.590	0.590	20	WG554909
1,2-Dichloroethane	mg/l	0.0202	0.0208	81.0	69-128	3.20	3.20	20	WG554909
1,2-Dichloropropane	mg/l	0.0207	0.0214	83.0	77-121	3.57	3.57	20	WG554909
1,3,5-Trimethylbenzene	mg/l	0.0212	0.0219	85.0	78-127	3.58	3.58	20	WG554909
1,3-Dichlorobenzene	mg/l	0.0214	0.0219	86.0	77-127	2.10	2.10	20	WG554909
1,3-Dichloropropane	mg/l	0.0208	0.0209	83.0	78-117	0.730	0.730	20	WG554909
1,4-Dichlorobenzene	mg/l	0.0209	0.0212	84.0	79-117	1.39	1.39	20	WG554909
2,2-Dichloropropane	mg/l	0.0223	0.0226	89.0	63-130	1.67	1.67	20	WG554909
2-Butanone (MEK)	mg/l	0.0769	0.0790	61.0	58-144	2.80	2.80	20	WG554909
2-Chloroethyl vinyl ether	mg/l	0.0996	0.105	80.0	26-172	4.98	4.98	22	WG554909
2-Chlorotoluene	mg/l	0.0212	0.0217	85.0	78-123	2.36	2.36	20	WG554909
4-Chlorotoluene	mg/l	0.0211	0.0217	84.0	78-122	3.00	3.00	20	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	0.102	0.102	82.0	58-147	0.530	0.530	20	WG554909
Acetone	mg/l	0.0698	0.0703	56.0	49-153	0.690	0.690	21	WG554909
Acrylonitrile	mg/l	0.0767	0.0803	61.0	53-153	4.59	4.59	20	WG554909
Benzene	mg/l	0.0190	0.0195	76.0	72-119	2.49	2.49	20	WG554909
Bromobenzene	mg/l	0.0205	0.0209	82.0	76-121	2.05	2.05	20	WG554909
Bromodichloromethane	mg/l	0.0223	0.0228	89.0	75-127	2.25	2.25	20	WG554909
Bromoform	mg/l	0.0186	0.0188	74.0	61-136	1.09	1.09	20	WG554909
Bromomethane	mg/l	0.0199	0.0219	80.0	42-172	9.35	9.35	20	WG554909
Carbon tetrachloride	mg/l	0.0203	0.0210	81.0	63-129	3.01	3.01	20	WG554909
Chlorobenzene	mg/l	0.0213	0.0216	85.0	78-123	1.51	1.51	20	WG554909
Chlorodibromomethane	mg/l	0.0230	0.0234	92.0	73-128	1.56	1.56	20	WG554909
Chloroethane	mg/l	0.0201	0.0209	80.0	52-164	3.65	3.65	20	WG554909
Chloroform	mg/l	0.0229	0.0237	92.0	76-122	3.27	3.27	20	WG554909

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Analyte	Units	Laboratory Result	Control Ref	%Rec	Sample	Duplicate	Limit	RPD	Limit	Batch
Chloromethane	mg/l	0.0123	0.0129	49*			50-141	5.42	20	WG554909
cis-1,2-Dichloroethene	mg/l	0.0203	0.0207	81.0			75-121	1.86	20	WG554909
cis-1,3-Dichloropropene	mg/l	0.0213	0.0220	85.0			74-124	2.93	20	WG554909
Di-isopropyl ether	mg/l	0.0208	0.0214	83.0			66-129	2.82	20	WG554909
Dibromomethane	mg/l	0.0201	0.0205	80.0			77-124	2.06	20	WG554909
Dichlorodifluoromethane	mg/l	0.0154	0.0162	62.0			33-173	4.51	20	WG554909
Ethylbenzene	mg/l	0.0206	0.0211	82.0			77-124	2.31	20	WG554909
Hexachloro-1,3-butadiene	mg/l	0.0187	0.0190	75.0			71-134	1.89	20	WG554909
Isopropylbenzene	mg/l	0.0233	0.0239	93.0			74-126	2.84	20	WG554909
Methyl tert-butyl ether	mg/l	0.0219	0.0221	87.0			67-127	1.06	20	WG554909
Methylene Chloride	mg/l	0.0210	0.0215	84.0			67-122	2.16	20	WG554909
n-Butylbenzene	mg/l	0.0206	0.0209	82.0			74-130	1.62	20	WG554909
n-Propylbenzene	mg/l	0.0214	0.0219	86.0			77-125	2.29	20	WG554909
Naphthalene	mg/l	0.0185	0.0191	74.0			70-134	3.29	20	WG554909
p-Isopropyltoluene	mg/l	0.0214	0.0221	86.0			77-132	3.46	20	WG554909
sec-Butylbenzene	mg/l	0.0214	0.0222	86.0			77-130	3.57	20	WG554909
Styrene	mg/l	0.0152	0.0156	61*			69-145	2.94	20	WG554909
tert-Butylbenzene	mg/l	0.0217	0.0223	87.0			76-131	2.64	20	WG554909
Tetrachloroethene	mg/l	0.0191	0.0193	76.0			75-121	0.980	20	WG554909
Toluene	mg/l	0.0201	0.0209	80.0			75-114	3.86	20	WG554909
trans-1,2-Dichloroethene	mg/l	0.0168	0.0174	67.0			63-127	3.28	20	WG554909
trans-1,3-Dichloropropene	mg/l	0.0192	0.0198	77.0			69-124	3.19	20	WG554909
Trichloroethene	mg/l	0.0192	0.0194	77.0			69-131	1.30	20	WG554909
Trichlorofluoromethane	mg/l	0.0198	0.0206	79.0			53-161	4.06	20	WG554909
Vinyl chloride	mg/l	0.0135	0.0140	54*			55-142	4.22	20	WG554909
Xylenes, Total	mg/l	0.0616	0.0628	82.0			77-123	1.93	20	WG554909
4-Bromofluorobenzene				99.89			82-120			WG554909
Dibromofluoromethane				99.78			82-126			WG554909
Toluene-d8				103.6			92-112			WG554909
Sulfate	mg/l	40.0	39.9	100.			90-110	0.250	20	WG555298
Acrolein	mg/l	0.0318	0.0302	25.0			10-181	5.21	30	WG555253
4-Bromofluorobenzene				107.1			82-120			WG555253
Dibromofluoromethane				100.6			82-126			WG555253
Toluene-d8				104.6			92-112			WG555253
1,2,4-Trichlorobenzene	mg/l	0.00635	0.00602	64.0			34-97	5.36	21	WG555187
2,4,5-Trichlorophenol	mg/l	0.00592	0.00663	59.0			41-125	11.3	27	WG555187
2,4,6-Trichlorophenol	mg/l	0.00565	0.00659	56.0			38-113	15.5	29	WG555187
2,4-Dichlorophenol	mg/l	0.00665	0.00673	66.0			46-105	1.18	20	WG555187
2,4-Dimethylphenol	mg/l	0.00673	0.00675	67.0			47-108	0.217	20	WG555187
2,4-Dinitrophenol	mg/l	0.00411	0.00564	41.0			10-121	31.4	40	WG555187
2,4-Dinitrotoluene	mg/l	0.00793	0.00841	79.0			59-117	5.81	20	WG555187
2,6-Dinitrotoluene	mg/l	0.00784	0.00751	78.0			57-110	4.33	20	WG555187
2-Chloronaphthalene	mg/l	0.00714	0.00708	71.0			47-106	0.782	20	WG555187
2-Chlorophenol	mg/l	0.00536	0.00678	54.0			37-90	23.5*	21	WG555187
2-Methylphenol	mg/l	0.00506	0.00569	50.0			35-84	11.9	20	WG555187
2-Nitrophenol	mg/l	0.00641	0.00660	64.0			40-112	2.98	22	WG555187
3&4-methyl phenol	mg/l	0.00541	0.00573	54.0			33-94	5.68	20	WG555187
3,3-Dichlorobenzidine	mg/l	0.00626	0.00637	63.0			58-116	1.68	20	WG555187
4,6-Dinitro-2-methylphenol	mg/l	0.00582	0.00756	58.0			21-119	26.0	40	WG555187
4-Bromophenyl-phenylether	mg/l	0.00779	0.00741	78.0			63-120	5.06	20	WG555187
4-Chloro-3-methylphenol	mg/l	0.00728	0.00652	73.0			50-105	11.0	20	WG555187
4-Chlorophenyl-phenylether	mg/l	0.00729	0.00703	73.0			58-115	3.64	20	WG555187
4-Nitrophenol	mg/l	0.00251	0.00273	25.0			10-53	8.26	40	WG555187

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Tax I.D. 62-0814289

Est. 1970

Quality Assurance Report
 Level II

L535398

September 19, 2011

Analyte	Units	Laboratory Result	Control Ref	%Rec	Sample	Duplicate	Limit	RPD	Limit	Batch
Acenaphthene	mg/l	0.00768	0.00728	77.0			52-107	5.34	20	WG555187
Acenaphthylene	mg/l	0.00797	0.00773	80.0			55-119	3.09	20	WG555187
Anthracene	mg/l	0.00811	0.00822	81.0			65-114	1.34	20	WG555187
Benzidine	mg/l	0.00202	0.00191	20.0			10-55	5.66	40	WG555187
Benzo(a)anthracene	mcg/l	0.00848	0.00867	85.0			68-113	2.24	20	WG555187
Benzo(a)pyrene	mg/l	0.00840	0.00784	84.0			68-115	6.91	20	WG555187
Benzo(b)fluoranthene	mg/l	0.00833	0.00766	83.0			67-114	8.41	20	WG555187
Benzo(g,h,i)perylene	mg/l	0.00936	0.00885	94.0			52-132	5.57	20	WG555187
Benzo(k)fluoranthene	mg/l	0.00860	0.00845	86.0			62-116	1.74	20	WG555187
Benzylbutyl phthalate	mg/l	0.00749	0.00778	75.0			12-166	3.81	20	WG555187
Bis(2-chloroethyl)methane	mg/l	0.00756	0.00673	76.0			56-116	11.7	20	WG555187
Bis(2-chloroethyl)ether	mg/l	0.00704	0.00656	70.0			39-109	7.12	23	WG555187
Bis(2-chloroisopropyl)ether	mg/l	0.00692	0.00658	69.0			43-108	5.04	20	WG555187
Bis(2-ethylhexyl)phthalate	mg/l	0.00928	0.00935	93.0			61-147	0.783	20	WG555187
Chrysene	mg/l	0.00863	0.00819	86.0			65-114	5.15	20	WG555187
Di-n-butyl phthalate	mg/l	0.00810	0.00807	81.0			56-133	0.412	20	WG555187
Di-n-octyl phthalate	mg/l	0.00929	0.00923	93.0			59-143	0.678	20	WG555187
Dibenz(a,h)anthracene	mg/l	0.00864	0.00825	86.0			54-130	4.59	20	WG555187
Dibenzo furan	mg/l	0.00708	0.00716	71.0			53-109	1.14	20	WG555187
Diethyl phthalate	mg/l	0.00725	0.00748	72.0			33-136	3.11	20	WG555187
Dimethyl phthalate	mg/l	0.00516	0.00567	52.0			10-152	9.40	22	WG555187
Fluoranthene	mg/l	0.00856	0.00851	86.0			66-120	0.503	20	WG555187
Fluorene	mg/l	0.00734	0.00704	73.0			58-110	4.19	20	WG555187
Hexachloro-1,3-butadiene	mg/l	0.00725	0.00706	72.0			34-115	2.55	22	WG555187
Hexachlorobenzene	mg/l	0.00696	0.00680	70.0			55-117	2.25	20	WG555187
Hexachlorocyclopentadiene	mg/l	0.00932	0.00940	93.0			20-121	0.827	27	WG555187
Hexachloroethane	mg/l	0.00648	0.00665	65.0			24-93	2.57	25	WG555187
Indeno(1,2,3-cd)pyrene	mg/l	0.00870	0.00832	87.0			56-129	4.55	20	WG555187
Isophorone	mg/l	0.00638	0.00587	64.0			55-108	8.27	20	WG555187
n-Nitrosodi-n-propylamine	mg/l	0.00768	0.00753	77.0			50-115	1.93	20	WG555187
n-Nitrosodimethylamine	mg/l	0.00441	0.00449	44.0			12-68	1.69	31	WG555187
n-Nitrosodiphenylamine	mg/l	0.00749	0.00747	75.0			55-98	0.247	20	WG555187
Naphthalene	mg/l	0.00672	0.00641	67.0			42-103	4.78	20	WG555187
Nitrobenzene	mg/l	0.00729	0.00663	73.0			39-102	9.59	20	WG555187
Pentachlorophenol	mg/l	0.00382	0.00581	38.0			10-101	41.3*	40	WG555187
Phenanthrone	mg/l	0.00806	0.00777	80.0			61-110	3.67	20	WG555187
Phenol	mg/l	0.00249	0.00266	25.0			10-53	6.62	20	WG555187
Pyrene	mg/l	0.00824	0.00825	82.0			65-116	0.0787	20	WG555187
Pyridine	mg/l	0.00313	0.00319	31.0			11-52	2.02	36	WG555187
2,4,6-Tribromophenol				68.05			16-147			WG555187
2-Fluorobiphenyl				71.08			29-127			WG555187
2-Fluorophenol				34.21			10-75			WG555187
Nitrobenzene-d5				63.72			17-119			WG555187
Phenol-d5				26.47			10-63			WG555187
p-Terphenyl-d14				75.37			40-174			WG555187
Ferrous Iron	mg/l	0.957	1.00	96.0			85-115	4.39	20	WG555165
1,2,4-Trichlorobenzene	mg/l	0.00573	0.00596	57.0			34-97	3.94	21	WG555542
2,4,6-Trichlorophenol	mg/l	0.00546	0.00583	54.0			38-113	6.66	29	WG555542
2,4-Dichlorophenol	mg/l	0.00569	0.00665	57.0			46-105	15.6	20	WG555542
2,4-Dimethylphenol	mg/l	0.00563	0.00574	56.0			47-108	1.86	20	WG555542
2,4-Dinitrophenol	mg/l	0.00361	0.00397	36.0			10-121	9.42	40	WG555542
2,4-Dinitrotoluene	mg/l	0.00801	0.00787	80.0			59-117	1.81	20	WG555542
2,6-Dinitrotoluene	mg/l	0.00742	0.00800	74.0			57-110	7.55	20	WG555542
2-Chloronaphthalene	mg/l	0.00758	0.00700	76.0			47-106	7.90	20	WG555542
2-Chlorophenol	mg/l	0.00483	0.00521	48.0			37-90	7.57	21	WG555542

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Level II

L535398

September 19, 2011

Analyte	Units	Laboratory		Control	Sample	Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec						
2-Nitrophenol	mg/l	0.00623	0.00670	62.0			40-112	7.23	22	WG555542
3,3-Dichlorobenzidine	mg/l	0.00773	0.00798	77.0			58-116	3.17	20	WG555542
4,6-Dinitro-2-methylphenol	mg/l	0.00445	0.00514	44.0			21-119	14.5	40	WG555542
4-Bromophenyl-phenylether	mg/l	0.00794	0.00744	79.0			63-120	6.50	20	WG555542
4-Chloro-3-methylphenol	mg/l	0.00543	0.00627	54.0			50-105	14.4	20	WG555542
4-Chlorophenyl-phenylether	mg/l	0.00679	0.00696	68.0			58-115	2.45	20	WG555542
4-Nitrophenol	mg/l	0.00102	0.00121	10.0			10-53	17.1	40	WG555542
Acenaphthene	mg/l	0.00748	0.00747	75.0			52-107	0.138	20	WG555542
Acenaphthylene	mg/l	0.00762	0.00758	76.0			55-119	0.546	20	WG555542
Anthracene	mg/l	0.00791	0.00750	79.0			65-114	5.26	20	WG555542
Benzidine	mg/l	0.00401	0.00361	40.0			10-55	10.3	40	WG555542
Benzo(a)anthracene	mg/l	0.00807	0.00811	81.0			68-113	0.455	20	WG555542
Benzo(a)pyrene	mg/l	0.00847	0.00812	85.0			68-115	4.28	20	WG555542
Benzo(b)fluoranthene	mg/l	0.00804	0.00785	80.0			67-114	2.36	20	WG555542
Benzo(g,h,i)perylene	mg/l	0.00822	0.00773	82.0			52-132	6.14	20	WG555542
Benzo(k)fluoranthene	mg/l	0.00870	0.00832	87.0			62-116	4.45	20	WG555542
Benzylbutyl phthalate	mg/l	0.00745	0.00664	74.0			12-166	11.6	20	WG555542
Bis(2-chlorethoxy)methane	mg/l	0.00782	0.00772	78.0			56-116	1.33	20	WG555542
Bis(2-chloroethyl)ether	mg/l	0.00647	0.00678	65.0			39-109	4.75	23	WG555542
Bis(2-chloroisopropyl)ether	mg/l	0.00760	0.00692	76.0			43-108	9.35	20	WG555542
Bis(2-ethylhexyl)phthalate	mg/l	0.00830	0.00824	83.0			61-147	0.705	20	WG555542
Chrysene	mg/l	0.00841	0.00807	84.0			65-114	4.11	20	WG555542
Di-n-butyl phthalate	mg/l	0.00794	0.00729	79.0			56-133	8.56	20	WG555542
Di-n-octyl phthalate	mg/l	0.00841	0.00826	84.0			59-143	1.74	20	WG555542
Dibenz(a,h)anthracene	mg/l	0.00829	0.00771	83.0			54-130	7.30	20	WG555542
Diethyl phthalate	mg/l	0.00763	0.00695	76.0			33-136	9.27	20	WG555542
Dimethyl phthalate	mg/l	0.00675	0.00575	68.0			10-152	16.1	22	WG555542
Fluoranthene	mg/l	0.00786	0.00727	79.0			66-120	7.80	20	WG555542
Fluorene	mg/l	0.00747	0.00737	75.0			58-110	1.34	20	WG555542
Hexachloro-1,3-butadiene	mg/l	0.00563	0.00541	56.0			34-115	3.99	22	WG555542
Hexachlorobenzene	mg/l	0.00709	0.00659	71.0			55-117	7.31	20	WG555542
Hexachlorocyclopentadiene	mg/l	0.00635	0.00642	64.0			20-121	1.14	27	WG555542
Hexachloroethane	mg/l	0.00540	0.00546	54.0			24-93	1.06	25	WG555542
Indeno(1,2,3-cd)pyrene	mg/l	0.00834	0.00794	83.0			56-129	4.97	20	WG555542
Isophorone	mg/l	0.00631	0.00644	63.0			55-108	1.94	20	WG555542
n-Nitrosodi-n-propylamine	mg/l	0.00867	0.00775	87.0			50-115	11.2	20	WG555542
n-Nitrosodimethylamine	mg/l	0.00376	0.00376	38.0			12-68	0.0415	31	WG555542
n-Nitrosodiphenylamine	mg/l	0.00810	0.00762	81.0			55-98	6.14	20	WG555542
Naphthalene	mg/l	0.00645	0.00678	64.0			42-103	4.98	20	WG555542
Nitrobenzene	mg/l	0.00746	0.00758	74.0			39-102	1.72	20	WG555542
Pentachlorophenol	mg/l	0.00323	0.00365	32.0			10-101	12.3	40	WG555542
Phenanthrene	mg/l	0.00785	0.00770	78.0			61-110	1.96	20	WG555542
Phenol	mg/l	0.00223	0.00224	22.0			10-53	0.0413	20	WG555542
Pyrene	mg/l	0.00777	0.00779	78.0			65-116	0.231	20	WG555542
2,4,6-Tribromophenol				60.10			16-147			WG555542
2-Fluorobiphenyl				70.64			29-127			WG555542
2-Fluorophenol				27.79			10-75			WG555542
Nitrobenzene-d5				73.94			17-119			WG555542
Phenol-d5				20.44			10-63			WG555542
p-Terphenyl-d14				79.14			40-174			WG555542

Analyte	Units	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res					
Nitrate	mg/l	11.0	6.10	5	98.0	80-120	L535062-02	WG554558
TPH (GC/FID) Low Fraction	mg/l	5.54	0.400	5.5	93.4	55-109	L534636-02	WG554541
a,a,a-Trifluorotoluene(FID)					110.5	62-128		WG554541

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Level II

L535398

September 19, 2011

Analyte	Units	Matrix	Spike	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Benzene	mg/l	0.0261	0	.025	104.		51-134	L535404-04	WG554548	
Ethylbenzene	mg/l	0.0239	0	.025	95.8		64-135	L535404-04	WG554548	
Toluene	mg/l	0.0241	0	.025	96.4		61-126	L535404-04	WG554548	
Total Xylenes	mg/l	0.0713	X	.075	95.0		64-133	L535404-04	WG554548	
4-Bromofluorobenzene						96.74	82-120		WG554548	
Dibromofluoromethane						113.9	82-126		WG554548	
Toluene-d8						103.6	92-112		WG554548	
a,a,a-Trifluorotoluene						97.29	90-116		WG554548	
TPH (GC/FID) Low Fraction	mg/l	5.85		0.140	5.5	104.	55-109	L535398-01	WG554738	
a,a,a-Trifluorotoluene(FID)						110.8	62-128		WG554738	
TPH (GC/FID) Low Fraction	mg/l	5.67	X	0	5.5	103.	55-109	L535576-03	WG554885	
a,a,a-Trifluorotoluene(FID)						103.4	62-128		WG554885	
Benzene	mg/l	0.320		0.110	.025	84.1	51-134	L535457-02	WG554911	
Ethylbenzene	mg/l	0.424		0.240	.025	73.5	64-135	L535457-02	WG554911	
Toluene	mg/l	0.436		0.250	.025	74.4	61-126	L535457-02	WG554911	
Total Xylenes	mg/l	1.59		1.20	.075	52.6*	64-133	L535457-02	WG554911	
4-Bromofluorobenzene						114.9	82-120		WG554911	
Dibromofluoromethane						103.9	82-126		WG554911	
Toluene-d8						104.4	92-112		WG554911	
a,a,a-Trifluorotoluene						111.2	90-116		WG554911	
1,1,1,2-Tetrachloroethane	mg/l	0.0235	0	.025	94.1		71-130	L535641-17	WG554909	
1,1,1-Trichloroethane	mg/l	0.0297	0	.025	119.		58-137	L535641-17	WG554909	
1,1,2,2-Tetrachloroethane	mg/l	0.0210	0	.025	84.1		64-149	L535641-17	WG554909	
1,1,2-Trichloroethane	mg/l	0.0221	0	.025	88.4		73-128	L535641-17	WG554909	
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0329	0	.025	132.		36-159	L535641-17	WG554909	
1,1-Dichloroethane	mg/l	0.0251	0	.025	100.		58-133	L535641-17	WG554909	
1,1-Dichloroethene	mg/l	0.0344	0	.025	138.		32-152	L535641-17	WG554909	
1,1-Dichloropropene	mg/l	0.0256	0	.025	102.		50-140	L535641-17	WG554909	
1,2,3-Trichlorobenzene	mg/l	0.0195	0	.025	77.9		68-135	L535641-17	WG554909	
1,2,3-Trichloropropane	mg/l	0.0218	0	.025	87.3		74-137	L535641-17	WG554909	
1,2,3-Trimethylbenzene	mg/l	0.0202	0	.025	80.7		67-133	L535641-17	WG554909	
1,2,4-Trichlorobenzene	mg/l	0.0203	0	.025	81.1		67-133	L535641-17	WG554909	
1,2,4-Trimethylbenzene	mg/l	0.0220	0	.025	88.2		62-141	L535641-17	WG554909	
1,2-Dibromo-3-Chloropropane	mg/l	0.0158	0	.025	63.1		55-148	L535641-17	WG554909	
1,2-Dibromoethane	mg/l	0.0216	0	.025	86.3		71-129	L535641-17	WG554909	
1,2-Dichlorobenzene	mg/l	0.0203	0	.025	81.0		75-125	L535641-17	WG554909	
1,2-Dichloroethane	mg/l	0.0222	0	.025	88.7		59-135	L535641-17	WG554909	
1,2-Dichloropropane	mg/l	0.0222	0	.025	88.9		68-126	L535641-17	WG554909	
1,3,5-Trimethylbenzene	mg/l	0.0234	0	.025	93.5		67-136	L535641-17	WG554909	
1,3-Dichlorobenzene	mg/l	0.0220	0	.025	89.0		69-131	L535641-17	WG554909	
1,3-Dichloropropane	mg/l	0.0213	0	.025	85.0		70-122	L535641-17	WG554909	
1,4-Dichlorobenzene	mg/l	0.0213	X	.025	85.4		70-123	L535641-17	WG554909	
2,2-Dichloropropane	mg/l	0.0265	0	.025	106.		51-141	L535641-17	WG554909	
2-Butanone (MEK)	mg/l	0.0749	0	.125	59.9		51-149	L535641-17	WG554909	
2-Chloroethyl vinyl ether	mg/l	0.0127	0	.125	10.2		10-161	L535641-17	WG554909	
2-Chlorotoluene	mg/l	0.0225	0	.025	90.2		65-133	L535641-17	WG554909	
4-Chlorotoluene	mg/l	0.0224	0	.025	89.4		67-129	L535641-17	WG554909	
4-Methyl-2-pentanone (MIBK)	mg/l	0.104	0	.125	83.1		53-154	L535641-17	WG554909	
Acetone	mg/l	0.0579	0	.125	46.3		34-146	L535641-17	WG554909	
Acrylonitrile	mg/l	0.0795	0	.125	63.6		49-162	L535641-17	WG554909	
Benzene	mg/l	0.0233	0	.025	93.2		51-134	L535641-17	WG554909	

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Tax I.D. 62-0814289

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Quality Assurance Report
Level II

L535398

September 19, 2011

Analyte	Units	Matrix		Spike	% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Bromobenzene	mg/l	0.0212	0	.025	84.9	64-130	L535641-17	WG554909
Bromodichloromethane	mg/l	0.0234	0	.025	93.7	67-132	L535641-17	WG554909
Bromoform	mg/l	0.0182	0	.025	72.9	59-137	L535641-17	WG554909
Bromomethane	mg/l	0.0309	0	.025	124.	23-177	L535641-17	WG554909
Carbon tetrachloride	mg/l	0.0286	0	.025	114.	49-140	L535641-17	WG554909
Chlorobenzene	mg/l	0.0225	0	.025	90.0	69-126	L535641-17	WG554909
Chlorodibromomethane	mg/l	0.0231	0	.025	92.4	68-130	L535641-17	WG554909
Chloroethane	mg/l	0.0298	0	.025	119.	32-177	L535641-17	WG554909
Chloroform	mg/l	0.0249	0	.025	99.4	64-130	L535641-17	WG554909
Chloromethane	mg/l	0.0199	0	.025	79.5	27-155	L535641-17	WG554909
cis-1,2-Dichloroethene	mg/l	0.0292	0.00610	.025	92.5	54-137	L535641-17	WG554909
cis-1,3-Dichloropropene	mg/l	0.0223	0	.025	89.3	63-127	L535641-17	WG554909
Di-isopropyl ether	mg/l	0.0214	0	.025	85.7	58-133	L535641-17	WG554909
Dibromomethane	mg/l	0.0217	0	.025	87.0	68-131	L535641-17	WG554909
Dichlorodifluoromethane	mg/l	0.0277	0	.025	111.	16-188	L535641-17	WG554909
Ethylbenzene	mg/l	0.0239	0	.025	95.8	64-135	L535641-17	WG554909
Hexachloro-1,3-butadiene	mg/l	0.0214	0	.025	85.6	64-140	L535641-17	WG554909
Isopropylbenzene	mg/l	0.0268	0	.025	107.	62-134	L535641-17	WG554909
Methyl tert-butyl ether	mg/l	0.0219	0	.025	87.8	55-136	L535641-17	WG554909
Methylene Chloride	mg/l	0.0245	0	.025	98.1	52-130	L535641-17	WG554909
n-Butylbenzene	mg/l	0.0234	0	.025	93.7	62-142	L535641-17	WG554909
n-Propylbenzene	mg/l	0.0244	0	.025	97.6	62-137	L535641-17	WG554909
Naphthalene	mg/l	0.0182	0	.025	72.9	65-140	L535641-17	WG554909
p-Isopropyltoluene	mg/l	0.0242	0	.025	96.9	64-142	L535641-17	WG554909
sec-Butylbenzene	mg/l	0.0251	0	.025	100.	67-139	L535641-17	WG554909
Styrene	mg/l	0.0157	0	.025	62.8	58-152	L535641-17	WG554909
tert-Butylbenzene	mg/l	0.0248	0	.025	99.3	66-139	L535641-17	WG554909
Tetrachloroethene	mg/l	0.0282	0.00330	.025	99.5	56-139	L535641-17	WG554909
Toluene	mg/l	0.0244	0	.025	97.5	61-126	L535641-17	WG554909
trans-1,2-Dichloroethene	mg/l	0.0251	0.000420	.025	98.7	45-137	L535641-17	WG554909
trans-1,3-Dichloropropene	mg/l	0.0205	0	.025	81.8	59-130	L535641-17	WG554909
Trichloroethene	mg/l	0.0339	0.0110	.025	91.5	40-155	L535641-17	WG554909
Trichlorofluoromethane	mg/l	0.0306	0	.025	122.	35-177	L535641-17	WG554909
Vinyl chloride	mg/l	0.0233	0.000410	.025	91.5	32-159	L535641-17	WG554909
Xylenes, Total	mg/l	0.0686	0	.075	91.5	64-133	L535641-17	WG554909
4-Bromofluorobenzene					98.38	82-120		WG554909
Dibromofluoromethane					99.31	82-126		WG554909
Toluene-d8					103.1	92-112		WG554909
Sulfate	mg/l	68.7	19.0	50	99.4	80-120	L535415-03	WG55298
Acrolein	mg/l	0.0204	0	.125	16.3	10-189	L535847-01	WG55253
4-Bromofluorobenzene					103.4	82-120		WG55253
Dibromofluoromethane					99.35	82-126		WG55253
Toluene-d8					104.3	92-112		WG55253
Ferrous Iron	mg/l	1.88	0.460	1.5	94.7	80-120	L536199-04	WG55165

Analyte	Units	Matrix		Spike	Duplicate	Limit	RPD	Limit Ref Samp	Batch	
		MSD	Ref	%Rec						
Nitrate	mg/l	10.9	11.0	96.0		80-120	0.913	20	L535062-02	WG554558
TPH (GC/FID) Low Fraction	mg/l	6.04	5.54	103.	55-109	8.74	20	1534636-02	WG554541	

a,a,a-Trifluorotoluene(FID) * Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



L A B S C I E N C E S

YOUR LAB OF CHOICE

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Analyte	Units	Matrix	Spike	Duplicate	Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/l	0.0255	0.0261	102.	51-134	2.02	20	L535404-04	WG554548
Ethylbenzene	mg/l	0.0240	0.0239	95.9	64-135	0.130	20	L535404-04	WG554548
Toluene	mg/l	0.0249	0.0241	99.6	61-126	3.20	20	L535404-04	WG554548
Total Xylenes	mg/l	0.0711	0.0713	94.8	64-133	0.310	20	L535404-04	WG554548
4-Bromofluorobenzene				91.99	82-120				WG554548
Dibromofluoromethane				108.7	82-126				WG554548
Toluene-d8				106.7	92-112				WG554548
a,a,a-Trifluorotoluene				98.04	90-116				WG554548
TPH (GC/FID) Low Fraction	mg/l	5.64	5.85	99.9	55-109	3.75	20	L535398-01	WG554738
a,a,a-Trifluorotoluene(FID)				109.2	62-128				WG554738
TPH (GC/FID) Low Fraction	mg/l	5.64	5.67	103.	55-109	0.460	20	L535576-03	WG554885
a,a,a-Trifluorotoluene(FID)				102.6	62-128				WG554885
Benzene	mg/l	0.319	0.320	83.5	51-134	0.470	20	L535457-02	WG554911
Ethylbenzene	mg/l	0.424	0.424	73.8	64-135	0.190	20	L535457-02	WG554911
Toluene	mg/l	0.445	0.436	77.9	61-126	1.96	20	L535457-02	WG554911
Total Xylenes	mg/l	1.61	1.59	54.2*	64-133	0.710	20	L535457-02	WG554911
4-Bromofluorobenzene				112.5	82-120				WG554911
Dibromofluoromethane				103.1	82-126				WG554911
Toluene-d8				104.4	92-112				WG554911
a,a,a-Trifluorotoluene				110.4	90-116				WG554911
1,1,1,2-Tetrachloroethane	mg/l	0.0245	0.0235	97.9	71-130	4.04	20	L535641-17	WG554909
1,1,1-Trichloroethane	mg/l	0.0313	0.0297	125.	58-137	5.08	20	L535641-17	WG554909
1,1,2,2-Tetrachloroethane	mg/l	0.0229	0.0210	91.7	64-149	8.63	20	L535641-17	WG554909
1,1,2-Trichloroethane	mg/l	0.0233	0.0221	93.3	73-128	5.41	20	L535641-17	WG554909
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/l	0.0355	0.0329	142.	36-159	7.57	21	L535641-17	WG554909
1,1-Dichloroethane	mg/l	0.0267	0.0251	107.	58-133	5.96	20	L535641-17	WG554909
1,1-Dichloroethene	mg/l	0.0363	0.0344	145.	32-152	5.40	20	L535641-17	WG554909
1,1-Dichloropropene	mg/l	0.0272	0.0256	109.	50-140	6.33	20	L535641-17	WG554909
1,2,3-Trichlorobenzene	mg/l	0.0214	0.0195	85.4	68-135	9.21	20	L535641-17	WG554909
1,2,3-Trichloropropane	mg/l	0.0241	0.0218	96.2	74-137	9.71	20	L535641-17	WG554909
1,2,3-Trimethylbenzene	mg/l	0.0214	0.0202	85.6	67-133	5.86	20	L535641-17	WG554909
1,2,4-Trichlorobenzene	mg/l	0.0219	0.0203	87.8	67-133	7.90	20	L535641-17	WG554909
1,2,4-Trimethylbenzene	mg/l	0.0228	0.0220	91.2	62-141	3.34	20	L535641-17	WG554909
1,2-Dibromo-3-Chloropropane	mg/l	0.0185	0.0158	74.2	55-148	16.2	22	L535641-17	WG554909
1,2-Dibromoethane	mg/l	0.0226	0.0216	90.6	71-129	4.79	20	L535641-17	WG554909
1,2-Dichlorobenzene	mg/l	0.0217	0.0203	86.8	75-125	6.85	20	L535641-17	WG554909
1,2-Dichloroethane	mg/l	0.0240	0.0222	95.9	59-135	7.81	20	L535641-17	WG554909
1,2-Dichloropropene	mg/l	0.0235	0.0222	94.0	68-126	5.48	20	L535641-17	WG554909
1,3,5-Trimethylbenzene	mg/l	0.0244	0.0234	97.4	67-136	4.15	20	L535641-17	WG554909
1,3-Dichlorobenzene	mg/l	0.0230	0.0220	91.9	69-131	4.30	20	L535641-17	WG554909
1,3-Dichloropropane	mg/l	0.0224	0.0213	89.6	70-122	5.29	20	L535641-17	WG554909
1,4-Dichlorobenzene	mg/l	0.0225	0.0213	89.8	70-123	5.06	20	L535641-17	WG554909
2,2-Dichloropropane	mg/l	0.0299	0.0265	120.	51-141	11.9	20	L535641-17	WG554909
2-Butanone (MEK)	mg/l	0.0951	0.0749	76.1	51-149	23.8*	22	L535641-17	WG554909
2-Chloroethyl vinyl ether	mg/l	0.00146	0.0127	1.17*	10-161	159.*	40	L535641-17	WG554909
2-Chlorotoluene	mg/l	0.0236	0.0225	94.6	65-133	4.76	20	L535641-17	WG554909
4-Chlorotoluene	mg/l	0.0232	0.0224	92.7	67-129	3.57	20	L535641-17	WG554909
4-Methyl-2-pentanone (MIBK)	mg/l	0.119	0.104	95.4	53-154	13.8	21	L535641-17	WG554909
Acetone	mg/l	0.0703	0.0579	56.2	34-146	19.4	22	L535641-17	WG554909
Acrylonitrile	mg/l	0.0982	0.0795	78.6	49-162	21.1*	20	L535641-17	WG554909
Benzene	mg/l	0.0245	0.0233	98.1	51-134	5.20	20	L535641-17	WG554909

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Analyte	Units	Matrix	Spike	Duplicate	Ref	%Rec	Limit	RPD	Limit	Ref	Samp	Batch
Bromobenzene	mg/l	0.0220	0.0212	88.0			64-130	3.64	20	L535641-17		WG554909
Bromodichloromethane	mg/l	0.0247	0.0234	98.7			67-132	5.18	20	L535641-17		WG554909
Bromoform	mg/l	0.0197	0.0182	78.8			59-137	7.78	20	L535641-17		WG554909
Bromomethane	mg/l	0.0319	0.0309	128.			23-177	3.06	21	L535641-17		WG554909
Carbon tetrachloride	mg/l	0.0305	0.0286	122.			49-140	6.33	20	L535641-17		WG554909
Chlorobenzene	mg/l	0.0233	0.0225	93.1			69-126	3.37	20	L535641-17		WG554909
Chlorodibromomethane	mg/l	0.0242	0.0231	96.7			68-130	4.56	20	L535641-17		WG554909
Chloroethane	mg/l	0.0314	0.0298	125.			32-177	5.20	21	L535641-17		WG554909
Chloroform	mg/l	0.0264	0.0249	105.			64-130	5.89	20	L535641-17		WG554909
Chloromethane	mg/l	0.0208	0.0199	83.2			27-155	4.53	20	L535641-17		WG554909
cis-1,2-Dichloroethene	mg/l	0.0305	0.0292	97.6			54-137	4.29	20	L535641-17		WG554909
cis-1,3-Dichloropropene	mg/l	0.0229	0.0223	91.5			63-127	2.46	20	L535641-17		WG554909
Di-isopropyl Ether	mg/l	0.0229	0.0214	91.4			58-133	6.53	20	L535641-17		WG554909
Dibromomethane	mg/l	0.0239	0.0217	95.6			68-131	9.51	20	L535641-17		WG554909
Dichlorodifluoromethane	mg/l	0.0296	0.0277	118.			16-188	6.94	22	L535641-17		WG554909
Ethylbenzene	mg/l	0.0245	0.0239	97.9			64-135	2.19	20	L535641-17		WG554909
Hexachloro-1,3-butadiene	mg/l	0.0229	0.0214	91.5			64-140	6.63	20	L535641-17		WG554909
Isopropylbenzene	mg/l	0.0280	0.0268	112.			62-134	4.22	20	L535641-17		WG554909
Methyl tert-butyl ether	mg/l	0.0244	0.0219	97.7			55-136	10.7	20	L535641-17		WG554909
Methylene Chloride	mg/l	0.0262	0.0245	105.			52-130	6.40	20	L535641-17		WG554909
n-Butylbenzene	mg/l	0.0252	0.0234	101.			62-142	7.13	20	L535641-17		WG554909
n-Propylbenzene	mg/l	0.0256	0.0244	102.			62-137	4.86	20	L535641-17		WG554909
Naphthalene	mg/l	0.0210	0.0182	84.0			65-140	14.1	20	L535641-17		WG554909
p-Isopropyltoluene	mg/l	0.0254	0.0242	101.			64-142	4.51	20	L535641-17		WG554909
sec-Butylbenzene	mg/l	0.0260	0.0251	104.			67-139	3.63	20	L535641-17		WG554909
Styrene	mg/l	0.0157	0.0157	62.9			58-152	0.160	20	L535641-17		WG554909
tert-Butylbenzene	mg/l	0.0257	0.0248	103.			66-139	3.40	20	L535641-17		WG554909
Tetrachloroethene	mg/l	0.0291	0.0282	103.			56-139	3.32	20	L535641-17		WG554909
Toluene	mg/l	0.0252	0.0244	101.			61-126	3.43	20	L535641-17		WG554909
trans-1,2-Dichloroethene	mg/l	0.0262	0.0251	103.			45-137	4.44	20	L535641-17		WG554909
trans-1,3-Dichloropropene	mg/l	0.0211	0.0205	84.4			59-130	3.07	20	L535641-17		WG554909
Trichloroethene	mg/l	0.0361	0.0339	100.			40-155	6.27	20	L535641-17		WG554909
Trichlorofluoromethane	mg/l	0.0330	0.0306	132.			35-177	7.50	23	L535641-17		WG554909
Vinyl chloride	mg/l	0.0244	0.0233	96.0			32-159	4.77	21	L535641-17		WG554909
Xylenes, Total	mg/l	0.0713	0.0686	95.1			64-133	3.84	20	L535641-17		WG554909
4-Bromofluorobenzene				97.99			82-120					WG554909
Dibromofluoromethane				101.8			82-126					WG554909
Toluene-d8				102.9			92-112					WG554909
Sulfate	mg/l	67.3	68.7	96.6			80-120	2.06	20	L535415-03		WG55298
Acrolein	mg/l	0.0223	0.0204	17.8			10-189	8.80	30	L535847-01		WG55253
4-Bromofluorobenzene				104.4			82-120					WG55253
Dibromofluoromethane				102.9			82-126					WG55253
Toluene-d8				102.6			92-112					WG55253
Ferrous Iron	mg/l	1.92	1.88	97.3			80-120	2.11	20	L536199-04		WG555165

Batch number /Run number / Sample number cross reference

WG554558: R1853333: L535398-07
 WG554541: R1853932: L535398-02 03 04 05 07
 WG554548: R1855772: L535398-01 02 03 04 05 07
 WG554738: R1856312: L535398-01 06
 WG554885: R1856492: L535398-08

* Performance of this Analyte is outside of established criteria.
 For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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WG554911: R1856715: L535398-06
WG554909: R1857732: L535398-08
WG554605: R1858592: L535398-01 02
WG554921: R1858593: L535398-03 04 05 07 08
WG555298: R1860032: L535398-07
WG555253: R1860293: L535398-08
WG555187: R1860474: L535398-02 04 05 08
WG555370: R1861012: L535398-06
WG555165: R1861275: L535398-07
WG555424: R1862793: L535398-03

* * Calculations are performed prior to rounding of reported values.
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

AECOM, Inc.
1601 Prospect Pkwy.
Fort Collins, CO 80525

Alternate billing information:

Chain of Custody
Page ____ of ____

Prepared by:

**ENVIRONMENTAL
SCIENCE CORP.**

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E150

CoCode ENSRFCCO (lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant Sample # (lab only)

Project Description:	EnCana Pavillion	City/State Collected	WY
Phone:	970-493-8878	Client Project #:	ESC Key:
FAX:		60196941	ENSRFCCO-ENCANAPA
Collected by:	Dawn Fairchild	Site/Facility ID#:	Pavillion
Collected by (signature):	<i>Dawn Fairchild</i>		
Packed on Ice N Y			
Rush? (Lab MUST Be Notified)	Date Results Needed:	No. of Cntrs	BTEX (8260) TPH DRO CID-32 SVOC
Same Day.....200%			
Next Day.....100%			
Two Day.....50%			

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	TB	TPH	DRO CID-32	SVOC	Ferrous Iron <2	Nitrate and Sulfate	sheen	1535398-01
SB-5-11 (TP-18-4)	Grab	GW	-	09.09.11	1440	86	X	X	X				-02
SB-3-11 (TP-14-12)			-	09.09.11	0900	8	X	X	X				-03
SB-1-11 (TP-14-12)			-	09.09.11	0805	8	X	X	X				-04
SB-5-11 (TP-22-11)			-	09.09.11	0933	8	X	X	X				-05
SB-2-11 (TP-31-3)			-	09.09.11	1105	8	X	X	X				-06
WT SB-1-11 (TP-42-11)			-	09.09.11	1255	86	X	X	X				-07
MW-6 (TP-42-11)	↓	↓	-	09.09.11	1218	810	X	X	X				-08
+ Drop	↓	↓	-	09.09.11		8	X	X					-09

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

873434330206

pH

Temp

Remarks:

xe @ coolers

873434330206

Flow

Other

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
<i>Dawn Fairchild</i>	09.09.11	1700			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 34°C	Bottles Received: 52+3TB
<i>Dawn Fairchild</i>					
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 9-10-11	pH Checked: 12
			<i>for ECE</i>	Time: 1130	NCF: ✓



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Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Report Summary

Wednesday September 07, 2011

Report Number: L533519

Samples Received: 08/30/11

Client Project: 601 969 41

Description: Encana Tribal Pavillion VRP-Fremont Co. WY

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Leslie Newton
Leslie Newton, ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

September 07, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : August 30, 2011
Description : Encana-Pavillion, WY
Sample ID : 14-12 SB-1-11 4-6FT
Collected By : Chris Ahrendt
Collection Date : 08/26/11 16:15

ESC Sample # : L533519-01
Site ID : 14-12
Project # : 601 969 41

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	08/31/11	5
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	96.6		% Rec.	GRO	08/31/11	5
Benzene	BDL	0.0050	mg/kg	8260B	08/31/11	5
Toluene	BDL	0.025	mg/kg	8260B	08/31/11	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	08/31/11	5
Total Xylenes	BDL	0.015	mg/kg	8260B	08/31/11	5
Surrogate Recovery						
Toluene-d8	106.		% Rec.	8260B	08/31/11	5
Dibromofluoromethane	101.		% Rec.	8260B	08/31/11	5
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	08/31/11	5
4-Bromofluorobenzene	105.		% Rec.	8260B	08/31/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	14.	4.0	mg/kg	8015	09/06/11	1
Surrogate recovery(%) o-Terphenyl	96.5		% Rec.	8015	09/06/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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EPAPAV0047712



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REPORT OF ANALYSIS

September 07, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : August 30, 2011 ESC Sample # : L533519-02
Description : Encana-Pavillion, WY Site ID : 14-12
Sample ID : 14-12 SB-6-11 4-6FT Project # : 601 969 41
Collected By : Chris Ahrendt
Collection Date : 08/26/11 15:50

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/01/11	5
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	GRO	09/01/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	9.3	4.0	mg/kg	8015	09/06/11	1
Surrogate recovery(%) o-Terphenyl	90.3		% Rec.	8015	09/06/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Quality Assurance Report
Level II

L533519

September 07, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed		
		Units	% Rec					
Benzene	< .001	mg/kg			WG553005	08/31/11 03:32		
Ethylbenzene	< .001	mg/kg			WG553005	08/31/11 03:32		
Toluene	< .005	mg/kg			WG553005	08/31/11 03:32		
Total Xylenes	< .003	mg/kg			WG553005	08/31/11 03:32		
4-Bromofluorobenzene		% Rec.	95.73	59-140	WG553005	08/31/11 03:32		
Dibromofluoromethane		% Rec.	108.0	63-139	WG553005	08/31/11 03:32		
Toluene-d8		% Rec.	106.4	84-116	WG553005	08/31/11 03:32		
a,a,a-Trifluorotoluene		% Rec.	100.2	80-118	WG553005	08/31/11 03:32		
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG553023	08/31/11 06:39		
a,a,a-Trifluorotoluene(FID)		% Rec.	98.24	59-128	WG553023	08/31/11 06:39		
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG553282	09/01/11 14:33		
a,a,a-Trifluorotoluene(FID)		% Rec.	98.10	59-128	WG553282	09/01/11 14:33		
TPH (GC/FID) High Fraction	< 4	ppm			WG553225	09/03/11 12:22		
c-Terphenyl		% Rec.	79.25	50-150	WG553225	09/03/11 12:22		
Analyte	Units	Laboratory	Control	Sample	% Rec	Limit	Batch	
		Known Val		Result				
Benzene	mg/kg	.025	0.0237	95.0		65-128	WG553005	
Ethylbenzene	mg/kg	.025	0.0225	90.0		74-128	WG553005	
Toluene	mg/kg	.025	0.0226	90.4		70-120	WG553005	
Total Xylenes	mg/kg	.075	0.0686	91.5		74-127	WG553005	
4-Bromofluorobenzene				93.49		59-140	WG553005	
Dibromofluoromethane				109.0		63-139	WG553005	
Toluene-d8				107.8		84-116	WG553005	
a,a,a-Trifluorotoluene				99.58		80-118	WG553005	
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.47	99.4		67-135	WG553023	
a,a,a-Trifluorotoluene(FID)				111.0		59-128	WG553023	
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.21	94.8		67-135	WG553282	
a,a,a-Trifluorotoluene(FID)				105.8		59-128	WG553282	
Analyte	Units	Laboratory	Control	Sample	Duplicate	RPD	Limit	Batch
		Result	Ref	%Rec	Limit			
Benzene	mg/kg	0.0238	0.0237	95.0	65-128	0.330	20	WG553005
Ethylbenzene	mg/kg	0.0232	0.0225	93.0	74-128	3.01	20	WG553005
Toluene	mg/kg	0.0233	0.0226	93.0	70-120	3.21	20	WG553005
Total Xylenes	mg/kg	0.0711	0.0686	95.0	74-127	3.62	20	WG553005
4-Bromofluorobenzene				94.65		59-140		WG553005
Dibromofluoromethane				108.5		63-139		WG553005
Toluene-d8				107.7		84-116		WG553005
a,a,a-Trifluorotoluene				100.6		80-118		WG553005
TPH (GC/FID) Low Fraction	mg/kg	5.36	5.47	97.0	67-135	1.95	20	WG553023
a,a,a-Trifluorotoluene(FID)				109.2		59-128		WG553023
TPH (GC/FID) Low Fraction	mg/kg	5.45	5.21	99.0	67-135	4.48	20	WG553282

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Quality Assurance Report
Level II

L533519

September 07, 2011

Analyte	Laboratory Control		Sample	Duplicate	Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
a,a,a-Trifluorotoluene(FID)				104.1	59-128			

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.139	0	.025	111.	16-143	L533503-01	WG553005
Ethylbenzene	mg/kg	0.118	0	.025	94.2	12-137	L533503-01	WG553005
Toluene	mg/kg	0.126	0	.025	101.	12-136	L533503-01	WG553005
Total Xylenes	mg/kg	0.362	0	.075	96.6	10-138	L533503-01	WG553005
4-Bromofluorobenzene					94.36	59-140		WG553005
Dibromofluoromethane					108.1	63-139		WG553005
Toluene-d8					106.8	84-116		WG553005
a,a,a-Trifluorotoluene					98.52	80-118		WG553005
TPH (GC/FID) Low Fraction	mg/kg	19.9	0	5.5	72.5	55-109	L533490-20	WG553023
a,a,a-Trifluorotoluene(FID)					100.6	59-128		WG553023
TPH (GC/FID) Low Fraction	mg/kg	20.4	0.0725	5.5	74.0	55-109	L533660-22	WG553282
a,a,a-Trifluorotoluene(FID)					101.9	59-128		WG553282

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/kg	0.135	0.139	108.	16-143	3.09	31	L533503-01	WG553005
Ethylbenzene	mg/kg	0.112	0.118	89.2	12-137	5.40	36	L533503-01	WG553005
Toluene	mg/kg	0.122	0.126	97.2	12-136	3.75	32	L533503-01	WG553005
Total Xylenes	mg/kg	0.337	0.362	89.8	10-138	7.30	36	L533503-01	WG553005
4-Bromofluorobenzene				92.17	59-140				WG553005
Dibromofluoromethane				110.6	63-139				WG553005
Toluene-d8				109.9	84-116				WG553005
a,a,a-Trifluorotoluene				99.04	80-118				WG553005
TPH (GC/FID) Low Fraction	mg/kg	20.9	19.9	75.9	55-109	4.64	20	L533490-20	WG553023
a,a,a-Trifluorotoluene(FID)				102.2	59-128				WG553023
TPH (GC/FID) Low Fraction	mg/kg	17.2	20.4	62.2	55-109	17.3	20	L533660-22	WG553282
a,a,a-Trifluorotoluene(FID)				100.0	59-128				WG553282

Batch number / Run number / Sample number cross reference

WG553005: R1838612: L533519-01

WG553023: R1839232: L533519-01

WG553282: R1843934: L533519-02

WG553225: R1844513: L533519-01 02

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



L A B S C I E N C E S

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Quality Assurance Report
Level II

L533519

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September 07, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Report Summary

Friday December 30, 2011

Report Number: L533934

Samples Received: 09/01/11

Client Project:

Description: EnCana Pavillion

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Leslie Newton
Leslie Newton, ESC Representative

Laboratory Certification Numbers

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GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915, PA - 68-02979

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REPORT OF ANALYSIS

December 30, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 01, 2011
Description : EnCana Pavillion W7
Sample ID : TRIP BLANK
Collected By : Jeremy Hurshman
Collection Date : 08/29/11 08:00

ESC Sample # : L533934-18

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0010	mg/l	8260B	09/01/11	1
Toluene	BDL	0.0050	mg/l	8260B	09/01/11	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	09/01/11	1
Total Xylenes	BDL	0.0030	mg/l	8260B	09/01/11	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	09/01/11	1
Dibromofluoromethane	97.3		% Rec.	8260B	09/01/11	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	09/01/11	1
4-Bromofluorobenzene	97.9		% Rec.	8260B	09/01/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

December 30, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 01, 2011
Description : EnCana Pavillion W7
Sample ID : SB2-11TP-14-12 7-8
Collected By : Jeremy Hurshman
Collection Date : 08/29/11 08:25

ESC Sample # : L533934-19

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	12.	5.0	mg/kg	GRO	09/02/11	50
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	101.		% Rec.	GRO	09/02/11	50
Benzene	BDL	0.050	mg/kg	8260B	09/02/11	50
Toluene	BDL	0.25	mg/kg	8260B	09/02/11	50
Ethylbenzene	BDL	0.050	mg/kg	8260B	09/02/11	50
Total Xylenes	BDL	0.15	mg/kg	8260B	09/02/11	50
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	09/02/11	50
Dibromofluoromethane	100.		% Rec.	8260B	09/02/11	50
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	09/02/11	50
4-Bromofluorobenzene	113.		% Rec.	8260B	09/02/11	50
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	10.	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%) o-Terphenyl	80.7		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

December 30, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 01, 2011
Description : EnCana Pavillion W7
Sample ID : SB3-11TP-14-12 7-8
Collected By : Jeremy Hurshman
Collection Date : 08/29/11 09:23

ESC Sample # : L533934-20

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	160	100	mg/kg	GRO	09/02/11	1000
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	101.		% Rec.	GRO	09/02/11	1000
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	1500	40.	mg/kg	8015	09/07/11	10
Surrogate recovery(%) o-Terphenyl	142.		% Rec.	8015	09/07/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

December 30, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 01, 2011
Description : EnCana Pavillion W7
Sample ID : SB3-11TP-14-12 9-11
Collected By : Jeremy Hurshman
Collection Date : 08/29/11 09:25

ESC Sample # : L533934-21

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	340	50.	mg/kg	GRO	09/02/11	500
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	99.5		% Rec.	GRO	09/02/11	500
Benzene	BDL	0.10	mg/kg	8260B	09/06/11	100
Toluene	BDL	0.50	mg/kg	8260B	09/06/11	100
Ethylbenzene	BDL	0.10	mg/kg	8260B	09/06/11	100
Total Xylenes	BDL	0.30	mg/kg	8260B	09/06/11	100
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/06/11	100
Dibromofluoromethane	99.6		% Rec.	8260B	09/06/11	100
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	09/06/11	100
4-Bromofluorobenzene	123.		% Rec.	8260B	09/06/11	100
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	1400	40.	mg/kg	8015	09/07/11	10
Surrogate recovery(%) o-Terphenyl	123.		% Rec.	8015	09/07/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 09/13/11 12:46 Revised: 12/30/11 10:41

L533934-21 (V8260BTEX) - Non-target compounds too high to run at a lower dilution.



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REPORT OF ANALYSIS

December 30, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 01, 2011
Description : EnCana Pavillion W7
Sample ID : SB5-11TP-14-12 7.5-8
Collected By : Jeremy Hurshman
Collection Date : 08/29/11 09:00

ESC Sample # : L533934-22

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	GRO	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	46.	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%) o-Terphenyl	63.0		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

December 30, 2011

Mr. Dustin Krajewski
AECOM Inc. - Fort Collins, CO
1601 Prospect Parkway
Fort Collins, CO 80525

Date Received : September 01, 2011
Description : EnCana Pavillion W7
Sample ID : SB4-11TP-14-12 10-12
Collected By : Jeremy Hurshman
Collection Date : 08/29/11 09:20

ESC Sample # : L533934-23

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	09/02/11	5
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	97.5		% Rec.	GRO	09/02/11	5
Benzene	BDL	0.0050	mg/kg	8260B	09/02/11	5
Toluene	BDL	0.025	mg/kg	8260B	09/02/11	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	09/02/11	5
Total Xylenes	BDL	0.015	mg/kg	8260B	09/02/11	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	09/02/11	5
Dibromofluoromethane	106.		% Rec.	8260B	09/02/11	5
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	09/02/11	5
4-Bromofluorobenzene	112.		% Rec.	8260B	09/02/11	5
DRO Wyoming C10-C32						
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	8015	09/03/11	1
Surrogate recovery(%) o-Terphenyl	65.8		% Rec.	8015	09/03/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L533934-01	WG553588	SAMP	Isophorone	R1845992	J4
L533934-02	WG553588	SAMP	Isophorone	R1845992	J4
L533934-03	WG553588	SAMP	Isophorone	R1845992	J4
	WG553588	SAMP	2-Fluorophenol	R1845992	J7
	WG553588	SAMP	Phenol-d5	R1845992	J7
	WG553588	SAMP	Nitrobenzene-d5	R1845992	J7
	WG554163	SAMP	Toluene-d8	R1849954	J1
	WG554163	SAMP	4-Bromofluorobenzene	R1849954	J1
L533934-04	WG553588	SAMP	Isophorone	R1845992	J4
	WG553908	SAMP	4-Bromofluorobenzene	R1848792	J1
L533934-15	WG553588	SAMP	Isophorone	R1845992	J4
L533934-24	WG553587	SAMP	TPH (GC/FID) High Fraction	R1844814	V
L533934-25	WG553588	SAMP	Isophorone	R1845992	J4
L533934-26	WG553588	SAMP	Nitrobenzene-d5	R1845992	J1
	WG553588	SAMP	Isophorone	R1845992	J4
	WG553588	SAMP	2-Fluorophenol	R1845992	J7
	WG553588	SAMP	Phenol-d5	R1845992	J7
	WG553588	SAMP	Nitrobenzene-d5	R1845992	J7
	WG553588	SAMP	2-Fluorobiphenyl	R1845992	J7
	WG553588	SAMP	2,4,6-Tribromophenol	R1845992	J7
	WG553588	SAMP	p-Terphenyl-d14	R1845992	J7
	WG553867	SAMP	o-Terphenyl	R1847632	J7
L533934-27	WG553867	SAMP	o-Terphenyl	R1847632	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J4	The associated batch QC was outside the established quality control range for accuracy.
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
V	(ESC) - Additional QC Info: The sample concentration is too high to evaluate accurate spike recoveries.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-09, -21, -22, -07, -08, -10, -20, -19, -23, -05

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553414

Analyst: 366

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) Low Fraction	8006-61-9	<0.100	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	5.82	106	67 - 135	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	5.43	98.8	67 - 135	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC4

Sample Numbers: L533934-02, -01, -12, -03

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553474

Analyst: 366

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) Low Fraction	8006-61-9	<0.100	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	6.74	122	67 - 135	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	6.91	126	67 - 135	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: VOCGC5

Sample Numbers: L533934-26, -27, -25

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553535

Analyst: 366

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) Low Fraction	8006-61-9	<0.100	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	5.65	103	67 - 135	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	5.67	103	67 - 135	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/6/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-17, -04, -14, -24

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553784

Analyst: 366

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) Low Fraction	8006-61-9	<0.100	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	5.69	103	67 - 135	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
TPH (GC/FID) Low Fraction	5.50	5.29	96.2	67 - 135	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-09, -21, -22, -07, -08, -10, -20, -19, -23, -05

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553414

Analyst: 366

Surrogate Summary

Laboratory Sample ID	a,a,a-Trifluorotoluene - FID ppb	% Rec	a,a,a-Trifluorotoluene - PID ppb	% Rec
LCS WG553414	225	112		
LCSD WG553414	220	110		
MS WG553414	202	101		
MSD WG553414	200	100.0		
Blank WG553414	199	99.5		
L533934-05	193	96.5		
L533934-07	199	99.5		
L533934-08	196	97.9		
L533934-09	194	97.1		
L533934-10	193	96.3		
L533934-19	202	101		
L533934-20	202	101		
L533934-21	199	99.5		
L533934-22	194	97.0		
L533934-23	195	97.5		

a,a,a-Trifluorotoluene (FID) 200 ppb Limits - 59 - 128
a,a,a-Trifluorotoluene (PID) 200 ppb Limits - 0 - 0



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC4

Sample Numbers: L533934-02, -01, -12, -03

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553474

Analyst: 366

Surrogate Summary

Laboratory Sample ID	a,a,a-Trifluorotoluene - FID ppb	% Rec	a,a,a-Trifluorotoluene - PID ppb	% Rec
LCS WG553474	202	101		
LCSD WG553474	199	99.3		
MS WG553474	194	96.9		
MSD WG553474	194	97.0		
Blank WG553474	195	97.4		
L533934-01	196	98.0		
L533934-02	188	93.9		
L533934-03	196	97.8		
L533934-12	192	96.1		

a,a,a-Trifluorotoluene (FID) 200 ppb Limits - 59 - 128
a,a,a-Trifluorotoluene (PID) 200 ppb Limits - 0 - 0



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: VOCGC5

Sample Numbers: L533934-26, -27, -25

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553535

Analyst: 366

Surrogate Summary

Laboratory Sample ID	a,a,a-Trifluorotoluene - FID ppb	% Rec	a,a,a-Trifluorotoluene - PID ppb	% Rec
LCS WG553535	198	99.2	200	100
LCSD WG553535	196	97.9	199	99.5
MS WG553535	195	97.5	197	98.6
MSD WG553535	192	95.9	190	94.9
Blank WG553535	188	93.8	192	96.0
L533934-25	184	91.8	197	98.7
L533934-26	185	92.7	194	96.8
L533934-27	185	92.4	195	97.4

a,a,a-Trifluorotoluene (FID) 200 ppb Limits - 59 - 128
a,a,a-Trifluorotoluene (PID) 200 ppb Limits - 54 - 144



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/6/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-17, -04, -14, -24

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553784

Analyst: 366

Surrogate Summary

Laboratory Sample ID	a,a,a-Trifluorotoluene - FID ppb	% Rec	a,a,a-Trifluorotoluene - PID ppb	% Rec
LCS WG553784	213	107		
LCSD WG553784	212	106		
MS WG553784	205	102		
MSD WG553784	208	104		
Blank WG553784	202	101		
L533934-14	197	98.5		
L533934-04	202	101		
L533934-17	198	99.2		
L533934-24	202	101		

a,a,a-Trifluorotoluene (FID) 200 ppb Limits - 59 - 128
a,a,a-Trifluorotoluene (PID) 200 ppb Limits - 0 - 0



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553414

Analysis Date: 9/2/2011

Analyst: 366

Instrument ID: VOCGC7

Sample Numbers: L533934-09, -21, -22, -07, -08, -10, -20, -19, -23, -05

Analyte	Laboratory Control Sample/				Laboratory Control Sample Duplicate				Control	Control	Qualifier
	Spike	LCS	% Rec	LCSD	Rec	Control	Limits	Qualifier			
TPH (GC/FID) Low Fraction	5.50	5.82	106	5.43	98.8	67-135			6.9	20	

Matrix Spike/Matrix Spike Duplicate

L533934-05

Analyte	Matrix Spike				Matrix Spike Duplicate				Control	Control	RPD
	Spike Value	Sample	MS	% Rec	MSD	% Rec	Qualifer	% Rec			
TPH (GC/FID) Low Fraction	27.5	0.0907	21.7	78.5	18.3	66.0	55-109		17	20	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC4

Sample Numbers: L533934-02, -01, -12, -03

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553474

Analyst: 366

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Control Qualifier
TPH (GC/FID) Low Fraction	5.50	6.74	122	6.91	126	67-135		2.6	20	

Matrix Spike/Matrix Spike Duplicate

L533854-27

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
TPH (GC/FID) Low Fraction	27.5	0.0000	24.3	88.2	26.6	96.6	55-109		9.1	20	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: VOCGC5

Sample Numbers: L533934-26, -27, -25

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553535

Analyst: 366

Analyte	Laboratory Control Sample			Laboratory Control Sample Duplicate			Control	Control	Control	Control
	Spike	LCS	% Rec	LCSD	% Rec	Limits	Qualifier	RPD	Limits	Qualifier
TPH (GC/FID) Low Fraction	5.50	5.65	103	5.67	103	67-135		0.5	20	

Matrix Spike/Matrix Spike Duplicate

L533941-01

Analyte	Spike			Spike			Control	% Rec	Control	Control	
	Value	Sample	MS	% Rec	MSD	% Rec					
TPH (GC/FID) Low Fraction	27.5	0.0000	25.5	92.7	21.8	79.4	55-109		15	20	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/6/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-17, -04, -14, -24

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553784

Analyst: 366

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Control Qualifier
TPH (GC/FID) Low Fraction	5.50	5.69	103	5.29	96.2	67-135		7.2	20	

Matrix Spike/Matrix Spike Duplicate

L533934-14

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
TPH (GC/FID) Low Fraction	27.5	0.0000	21.5	78.2	24.9	90.5	55-109		15	20	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-09, -21, -22, -07, -08, -10, -20, -19, -23, -05

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553414

Analyst: 366

Internal Standard Response and Retention Time Summary

FileID:0902_03.D

Date:9/2/2011

Time:3:16 AM

	IS - FID		IS - PID
	Response	RT	Response
			RT
12 Hour Std	7450979	4.66	332
Upper Limit	14901958	5.16	664
Lower Limit	3725489.5	4.16	166

Sample ID	Response	RT	Response	RT
Blank WG553414	7156245	4.67		
L533934-05	7724608	4.67		
L533934-07	8053877	4.67		
L533934-08	7391160	4.67		
L533934-09	7358869	4.66		
L533934-10	7432862	4.67		
L533934-19	6782965	4.66		
L533934-20	6600147	4.67		
L533934-21	7115433	4.66		
L533934-22	8199676	4.66		
L533934-23	6527147	4.67		
LCS WG553414	6983928	4.67		
LCSD WG553414	7610717	4.66		
MS WG553414	7751338	4.66		
MSD WG553414	8622138	4.66		



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/2/2011

Instrument ID: VOCGC4

Sample Numbers: L533934-02, -01, -12, -03

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553474

Analyst: 366

Internal Standard Response and Retention Time Summary

FileID:0902_04.D

Date:9/2/2011

Time:12:59 PM

	IS - FID	IS - PID		
	Response	RT	Response	RT
12 Hour Std	4757048	6.65		
Upper Limit	9514096	7.15		
Lower Limit	2378524	6.15		

Sample ID	Response	RT	Response	RT
Blank WG553474	4444789	6.66		
L533934-01	4564855	6.65		
L533934-02	4855009	6.65		
L533934-03	4467077	6.65		
L533934-12	5115725	6.65		
LCS WG553474	4601922	6.65		
LCSD WG553474	4659438	6.65		
MS WG553474	5187450	6.66		
MSD WG553474	5261224	6.66		



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: VOCGC5

Sample Numbers: L533934-26, -27, -25

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553535

Analyst: 366

Internal Standard Response and Retention Time Summary

FileID:0902_63.D

Date:9/3/2011

Time:8:56 PM

	IS - FID		IS - PID
	Response	RT	Response
12 Hour Std	4253616	5.98	9131722
Upper Limit	8507232	6.48	18263444
Lower Limit	2126808	5.48	4565861

Sample ID	Response	RT	Response	RT
Blank WG553535	3967107	5.98	9658008	5.98
L533934-25	4136214	5.98	9537672	5.98
L533934-26	4130470	5.98	9821574	5.98
L533934-27	4115766	5.98	9688753	5.98
LCS WG553535	4183682	5.97	9259478	5.97
LCSD WG553535	4266311	5.98	9318721	5.98
MS WG553535	4273221	5.97	9554293	5.97
MSD WG553535	4283798	5.98	9788990	5.98



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Method GRO

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/6/2011

Instrument ID: VOCGC7

Sample Numbers: L533934-17, -04, -14, -24

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553784

Analyst: 366

Internal Standard Response and Retention Time Summary

FileID:0906_35.D

Date:9/6/2011

Time:5:08 PM

		IS - FID		IS - PID
	Response	RT	Response	RT
12 Hour Std	7532781	4.66	3003	4.67
Upper Limit	15065562	5.16	6006	5.17
Lower Limit	3766390.5	4.16	1501.5	4.17

Sample ID	Response	RT	Response	RT
Blank WG553784	7292060	4.67		
L533934-04	6842604	4.66		
L533934-14	7732972	4.66		
L533934-17	6675255	4.66		
L533934-24	7375288	4.66		
LCS WG553784	7616599	4.67		
LCSD WG553784	8466217	4.66		
MS WG553784	8307303	4.66		
MSD WG553784	7268636	4.67		



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553359

Analysis Date: 9/2/2011

Analyst: 74

Instrument ID: VOCMS26

Sample Numbers: L533934-02, -19, -24, -26, -06, -25, -23

Method Blank

Analyte	CAS	PQL	Qualifiers
Benzene	71-43-2	<0.0010	
Toluene	108-88-3	<0.0050	
Ethylbenzene	100-41-4	<0.0010	
m&p-Xylene	1330-20-7	<0.0030	
o-Xylene	1330-20-7	<0.0030	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0250	99.9	65 - 128	
Toluene	0.0250	0.0235	93.9	70 - 120	
Ethylbenzene	0.0250	0.0255	102	74 - 128	
m&p-Xylene	0.0500	0.0495	99.1	73 - 127	
o-Xylene	0.0250	0.0259	104	75 - 129	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0263	105	65 - 128	
Toluene	0.0250	0.0249	99.4	70 - 120	
Ethylbenzene	0.0250	0.0268	107	74 - 128	
m&p-Xylene	0.0500	0.0522	104	73 - 127	
o-Xylene	0.0250	0.0272	109	75 - 129	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Water - mg/L
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553360
Analysis Date: 9/1/2011 Analyst: 74
Instrument ID: VOCMS4
Sample Numbers: L533934-18

Method Blank

Analyte	CAS	PQL	Qualifiers
Benzene	71-43-2	<0.0010	
Toluene	108-88-3	<0.0050	
Ethylbenzene	100-41-4	<0.0010	
m&p-Xylene	1330-20-7	<0.0030	
o-Xylene	1330-20-7	<0.0030	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0225	89.8	67 - 126	
Toluene	0.0250	0.0218	87.0	72 - 122	
Ethylbenzene	0.0250	0.0250	100.0	76 - 129	
m&p-Xylene	0.0500	0.0483	96.6	74 - 128	
o-Xylene	0.0250	0.0251	100	78 - 128	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0219	87.5	67 - 126	
Toluene	0.0250	0.0215	86.1	72 - 122	
Ethylbenzene	0.0250	0.0235	94.0	76 - 129	
m&p-Xylene	0.0500	0.0475	94.9	74 - 128	
o-Xylene	0.0250	0.0243	97.3	78 - 128	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553769

Analysis Date: 9/6/2011

Analyst: 74

Instrument ID: VOCMS25

Sample Numbers: L533934-21, -01, -27

Method Blank

Analyte	CAS	PQL	Qualifiers
Benzene	71-43-2	<0.0010	
Toluene	108-88-3	<0.0050	
Ethylbenzene	100-41-4	<0.0010	
m&p-Xylene	1330-20-7	<0.0030	
o-Xylene	1330-20-7	<0.0030	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0208	83.1	65 - 128	
Toluene	0.0250	0.0206	82.3	70 - 120	
Ethylbenzene	0.0250	0.0219	87.7	74 - 128	
m&p-Xylene	0.0500	0.0429	85.8	73 - 127	
o-Xylene	0.0250	0.0226	90.3	75 - 129	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0212	84.8	65 - 128	
Toluene	0.0250	0.0207	82.7	70 - 120	
Ethylbenzene	0.0250	0.0220	88.1	74 - 128	
m&p-Xylene	0.0500	0.0436	87.1	73 - 127	
o-Xylene	0.0250	0.0223	89.3	75 - 129	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553908

Analysis Date: 9/7/2011

Analyst: 498

Instrument ID: VOCMS2

Sample Numbers: L533934-04

Method Blank

Analyte	CAS	PQL	Qualifiers
Benzene	71-43-2	<0.0010	
Toluene	108-88-3	<0.0050	
Ethylbenzene	100-41-4	<0.0010	
m&p-Xylene	1330-20-7	<0.0030	
o-Xylene	1330-20-7	<0.0030	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0257	103	65 - 128	
Toluene	0.0250	0.0269	107	70 - 120	
Ethylbenzene	0.0250	0.0283	113	74 - 128	
m&p-Xylene	0.0500	0.0576	115	73 - 127	
o-Xylene	0.0250	0.0274	110	75 - 129	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0240	96.0	65 - 128	
Toluene	0.0250	0.0248	99.2	70 - 120	
Ethylbenzene	0.0250	0.0261	104	74 - 128	
m&p-Xylene	0.0500	0.0538	108	73 - 127	
o-Xylene	0.0250	0.0268	107	75 - 129	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG554163

Analysis Date: 9/8/2011

Analyst: 498

Instrument ID: VOCMS2

Sample Numbers: L533934-03

Method Blank

Analyte	CAS	PQL	Qualifiers
Benzene	71-43-2	<0.0010	
Toluene	108-88-3	<0.0050	
Ethylbenzene	100-41-4	<0.0010	
m&p-Xylene	1330-20-7	<0.0030	
o-Xylene	1330-20-7	<0.0030	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0216	86.3	65 - 128	
Toluene	0.0250	0.0217	86.7	70 - 120	
Ethylbenzene	0.0250	0.0230	92.2	74 - 128	
m&p-Xylene	0.0500	0.0468	93.7	73 - 127	
o-Xylene	0.0250	0.0229	91.6	75 - 129	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Benzene	0.0250	0.0226	90.6	65 - 128	
Toluene	0.0250	0.0224	89.7	70 - 120	
Ethylbenzene	0.0250	0.0246	98.6	74 - 128	
m&p-Xylene	0.0500	0.0501	100	73 - 127	
o-Xylene	0.0250	0.0250	100.0	75 - 129	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/2/2011 Analytic Batch: WG553359

Instrument ID: VOCMS26 Analyst: 74

Sample Numbers: L533934-02, -19, -24, -26, -06, -25, -23

Surrogate Summary

Laboratory	Dibromofluoromethane		Toluene-d8		4-Bromofluorobenzene		Alternate Surrogate	
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG553359	42.3	106	41.5	104	42.7	107	42.1	105
LCSD WG553359	42.5	106	41.5	104	43.1	108	42.4	106
MS WG553359	43.1	108	41.6	104	42.5	106	42.4	106
MSD WG553359	42.9	107	41.3	103	43.1	108	41.7	104
Blank WG553359	42.5	106	41.5	104	45.3	113	42.2	106
L533934-23	42.3	106	41.7	104	45.0	112	41.8	105
L533934-02	40.4	101	42.0	105	55.0	137	43.1	108
L533934-06	45.8	114	38.3	95.7	36.1	90.1	35.2	88.0
L533934-19	40.1	100	40.6	101	45.4	113	42.7	107
L533934-24	39.8	99.4	41.1	103	49.6	124	42.7	107
L533934-25	39.7	99.2	42.3	106	47.5	119	43.6	109
L533934-26	40.6	102	41.5	104	46.4	116	43.4	109

Dibromofluoromethane	40 ppb	63 - 139
Toluene - d8	40 ppb	84 - 116
4-Bromofluorobenzene	40 ppb	59 - 140
Alternate Surrogate		
a,a,a-Trifluorotoluene	40 ppb	80 - 118



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Water - mg/L
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553360
Analysis Date: 9/1/2011 Analyst: 74
Instrument ID: VOCMS4
Sample Numbers: L533934-18

Surrogate Summary

Laboratory	Dibromofluoromethane		Toluene-d8		4-Bromofluorobenzene		Alternate Surrogate	
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG553360	37.6	93.9	39.5	98.8	40.0	99.9	42.3	106
LCSD WG553360	38.2	95.6	40.9	102	40.2	100	42.8	107
MS WG553360	39.2	98.0	39.7	99.4	40.3	101	41.4	104
MSD WG553360	38.7	96.8	40.8	102	41.3	103	42.1	105
Blank WG553360	38.1	95.3	40.8	102	38.9	97.1	41.9	105
L533934-18	38.9	97.3	41.2	103	39.2	97.9	41.9	105

Dibromofluoromethane	40 ppb	79 - 125
Toluene - d8	40 ppb	87 - 114
4-Bromofluorobenzene	40 ppb	75 - 128
Alternate Surrogate		
a,a,a-Trifluorotoluene	40 ppb	84 - 114



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg

Project: EnCana Pavillion W7 EPA ID: TN00003

Collection Date: 8/29/2011 Analytic Batch: WG553769

Analysis Date: 9/6/2011 Analyst: 74

Instrument ID: VOCMS25

Sample Numbers: L533934-21, -01, -27

Surrogate Summary

Laboratory	Dibromofluoromethane		Toluene-d8		4-Bromofluorobenzene		Alternate Surrogate	
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG553769	40.7	102	42.0	105	40.0	100	42.6	107
LCSD WG553769	40.6	102	41.6	104	40.0	99.9	41.7	104
Blank WG553769	40.3	101	41.7	104	40.4	101	42.4	106
MS WG553769	41.0	103	42.2	105	39.8	99.5	41.5	104
MSD WG553769	40.6	101	41.4	103	40.5	101	42.0	105
L533934-21	39.8	99.6	41.5	104	49.2	123	42.8	107
L533934-01	37.3	93.2	42.7	107	49.5	124	43.9	110
L533934-27	37.4	93.6	42.4	106	50.2	126	43.5	109

Dibromofluoromethane	40 ppb	63 - 139
Toluene - d8	40 ppb	84 - 116
4-Bromofluorobenzene	40 ppb	59 - 140
Alternate Surrogate		
a,a,a-Trifluorotoluene	40 ppb	80 - 118



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553908
Analysis Date: 9/7/2011 Analyst: 498
Instrument ID: VOCMS2
Sample Numbers: L533934-04

Surrogate Summary

Laboratory	Dibromofluoromethane		Toluene-d8		4-Bromofluorobenzene		Alternate Surrogate		
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec	
LCS WG553908	41.9	105	41.6	104	41.0	102	44.3	111	
LCSD WG553908	42.8	107	41.0	103	40.9	102	44.6	111	
MS WG553908	42.4	106	41.6	104	41.8	105	45.1	113	
MSD WG553908	43.4	109	40.9	102	40.7	102	43.2	108	
Blank WG553908	44.4	111	40.3	101	40.6	101	46.1	115	
L533934-04	38.6	96.6	43.0	107	69.3	173	*	42.1	105

Dibromofluoromethane	40 ppb	63 - 139
Toluene - d8	40 ppb	84 - 116
4-Bromofluorobenzene	40 ppb	59 - 140
Alternate Surrogate		
a,a,a-Trifluorotoluene	40 ppb	80 - 118



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG554163
Analysis Date: 9/8/2011 Analyst: 498
Instrument ID: VOCMS2
Sample Numbers: L533934-03

Surrogate Summary

Laboratory	Dibromofluoromethane		Toluene-d8		4-Bromofluorobenzene		Alternate Surrogate	
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG554163	42.9	107	40.7	102	40.1	100	43.3	108
LCSD WG554163	42.6	106	40.1	100	40.7	102	44.5	111
Blank WG554163	41.8	104	40.7	102	38.3	95.7	44.8	112
MS WG554163	43.7	109	40.9	102	40.0	100	43.1	108
MSD WG554163	42.7	107	40.7	102	39.0	97.6	43.1	108
L533934-03	39.5	98.7	49.2	123	J1 85.2	213 *	41.1	103

Dibromofluoromethane	40 ppb	63 - 139
Toluene - d8	40 ppb	84 - 116
4-Bromofluorobenzene	40 ppb	59 - 140
Alternate Surrogate		
a,a,a-Trifluorotoluene	40 ppb	80 - 118



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg

Project: EnCana Pavillion W7 EPA ID: TN00003

Collection Date: 8/29/2011 Analytic Batch: WG553359

Analysis Date: 9/2/2011 Analyst: 74

Instrument ID: VOCMS26

Sample Numbers: L533934-02, -19, -24, -26, -06, -25, -23

Analyte	Laboratory Control Sample/				Laboratory Control Sample Duplicate				Control	Control	Qualifier
	Spike	LCS	% Rec	LCSD	Rec	Limits	Qualifier	RPD			
Benzene	0.0250	0.0250	99.9	0.0263	105	65-128			5.0	20	
Toluene	0.0250	0.0235	93.9	0.0249	99.4	70-120			5.7	20	
Ethylbenzene	0.0250	0.0255	102	0.0268	107	74-128			5.2	20	
m&p-Xylene	0.0500	0.0495	99.1	0.0522	104	73-127			5.3	20	
o-Xylene	0.0250	0.0259	104	0.0272	109	75-129			4.9	20	

Matrix Spike/Matrix Spike Duplicate

L533934-23

Analyte	Matrix Spike				Matrix Spike Duplicate				Control	Control	RPD	
	Spike Value	Sample	MS	% Rec	MSD	Rec	Limits	Qualifier	% Rec	% RPD	Limits	Qual
Benzene	0.125	0.0000	0.134	107	0.141	113	16-143		5.1	31		
Toluene	0.125	0.0004	0.122	97.5	0.127	101	12-136		3.7	32		
Ethylbenzene	0.125	0.0000	0.131	105	0.138	110	12-137		5.2	36		
m&p-Xylene	0.250	0.0010	0.252	101	0.266	106	10-135		5.3	37		
o-Xylene	0.125	0.0000	0.131	105	0.139	111	14-140		5.6	35		



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Water - mg/L
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553360
Analysis Date: 9/1/2011 Analyst: 74
Instrument ID: VOCMS4
Sample Numbers: L533934-18

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Control Qualifier
Benzene	0.0250	0.0225	89.8	0.0219	87.5	67-126		2.6	20	
Toluene	0.0250	0.0218	87.0	0.0215	86.1	72-122		1.1	20	
Ethylbenzene	0.0250	0.0250	100.0	0.0235	94.0	76-129		6.2	20	
m&p-Xylene	0.0500	0.0483	96.6	0.0475	94.9	74-128		1.8	20	
o-Xylene	0.0250	0.0251	100	0.0243	97.3	78-128		3.2	20	

Matrix Spike/Matrix Spike Duplicate

L533963-01

Analyte	Spike			% Rec			%	Control	% Rec	%	Control	RPD
	Value	Sample	MS	Rec	MSD	Rec	Limits	Qualifier	RPD	Limits	Qual	
Benzene	0.0250	0.0000	0.0243	97.4	0.0239	95.5	16-158		1.9	21		
Toluene	0.0250	0.0004	0.0230	90.4	0.0235	92.5	22-152		2.2	22		
Ethylbenzene	0.0250	0.0000	0.0258	103	0.0270	108	29-150		4.7	24		
m&p-Xylene	0.0500	0.0000	0.0515	103	0.0521	104	24-151		1.0	23		
o-Xylene	0.0250	0.0000	0.0265	106	0.0268	107	32-151		1.4	23		



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553769
Analysis Date: 9/6/2011 Analyst: 74
Instrument ID: VOCMS25
Sample Numbers: L533934-21, -01, -27

Analyte	Laboratory Control Sample/				Laboratory Control Sample Duplicate				Control	Control	Qualifier
	Spike	LCS	% Rec	LCSD	Rec	Control Limits	Qualifier	RPD			
Benzene	0.0250	0.0208	83.1	0.0212	84.8	65-128			2.0	20	
Toluene	0.0250	0.0206	82.3	0.0207	82.7	70-120			0.5	20	
Ethylbenzene	0.0250	0.0219	87.7	0.0220	88.1	74-128			0.5	20	
m&p-Xylene	0.0500	0.0429	85.8	0.0436	87.1	73-127			1.5	20	
o-Xylene	0.0250	0.0226	90.3	0.0223	89.3	75-129			1.1	20	

Matrix Spike/Matrix Spike Duplicate

L533854-23

Analyte	Spike				Matrix Spike Duplicate				Control	Control	RPD	
	Value	Sample	MS	% Rec	MSD	Rec	Limits	Qualifier	% Rec	% RPD	Limits	Qual
Benzene	0.125	0.0003	0.101	80.7	0.109	86.6	16-143			7.0	31	
Toluene	0.125	0.0000	0.0976	78.1	0.105	84.0	12-136			7.4	32	
Ethylbenzene	0.125	0.0000	0.103	82.6	0.117	93.8	12-137			13	36	
m&p-Xylene	0.250	0.0000	0.199	79.6	0.226	90.3	10-135			13	37	
o-Xylene	0.125	0.0000	0.0995	79.6	0.113	90.1	14-140			12	35	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553908
Analysis Date: 9/7/2011 Analyst: 498
Instrument ID: VOCMS2
Sample Numbers: L533934-04

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Control Qualifier
Benzene	0.0250	0.0257	103	0.0240	96.0	65-128		6.8	20	
Toluene	0.0250	0.0269	107	0.0248	99.2	70-120		8.0	20	
Ethylbenzene	0.0250	0.0283	113	0.0261	104	74-128		8.1	20	
m&p-Xylene	0.0500	0.0576	115	0.0538	108	73-127		6.9	20	
o-Xylene	0.0250	0.0274	110	0.0268	107	75-129		2.4	20	

Matrix Spike/Matrix Spike Duplicate

L533988-02

Analyte	Spike	% Rec		% Rec		Control	% Rec	% RPD	Control	RPD
	Value	Sample	MS	Rec	MSD	Limits	Qualifier	RPD	Limits	Qual
Benzene	0.125	0.0000	0.126	101	0.124	99.3	16-143	1.5	31	
Toluene	0.125	0.0004	0.137	109	0.127	101	12-136	7.6	32	
Ethylbenzene	0.125	0.0000	0.143	114	0.134	107	12-137	6.1	36	
m&p-Xylene	0.250	0.0000	0.296	118	0.270	108	10-135	8.9	37	
o-Xylene	0.125	0.0000	0.139	111	0.132	105	14-140	5.5	35	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG554163
Analysis Date: 9/8/2011 Analyst: 498
Instrument ID: VOCMS2
Sample Numbers: L533934-03

Laboratory Control Sample/ Laboratory Control Sample Duplicate

Analyte	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	% RPD	Control Limits	Control Qualifier
Benzene	0.0250	0.0216	86.3	0.0226	90.6	65-128		4.8	20	
Toluene	0.0250	0.0217	86.7	0.0224	89.7	70-120		3.4	20	
Ethylbenzene	0.0250	0.0230	92.2	0.0246	98.6	74-128		6.7	20	
m&p-Xylene	0.0500	0.0468	93.7	0.0501	100	73-127		6.8	20	
o-Xylene	0.0250	0.0229	91.6	0.0250	100.0	75-129		8.7	20	

Matrix Spike/Matrix Spike Duplicate

L534436-16

Analyte	Spike	% Rec		% Rec		Control	% Rec	% Rec	Control	RPD
	Value	Sample	MS	Rec	MSD	Limits	Qualifier	RPD	Limits	Qual
Benzene	0.125	0.0000	0.118	94.5	0.126	101	16-143		6.7	31
Toluene	0.125	0.0000	0.116	93.1	0.127	102	12-136		8.9	32
Ethylbenzene	0.125	0.0034	0.126	98.2	0.133	103	12-137		4.9	36
m&p-Xylene	0.250	0.0016	0.253	100	0.269	107	10-135		6.1	37
o-Xylene	0.125	0.0000	0.123	98.3	0.130	104	14-140		5.6	35



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/2/2011 Analytic Batch: WG553359

Instrument ID: VOCMS26 Analyst: 74

Sample Numbers: L533934-02, -19, -24, -26, -06, -25, -23

Internal Standard Response and Retention Time Summary

FileID:0902_03.D

Date:9/2/2011

Time:1:38 PM

	IS1 Response	RT	IS2 Response	RT	IS3 Response	RT	IS4 Response	RT
12 Hour Std	521960	5.69	830967	6.18	118076	7.88	350762	11.07
Upper Limit	1043920	6.19	1661934	6.68	236152	8.38	701524	11.57
Lower Limit	260980	5.19	415483.5	5.68	59038	7.38	175381	10.57

Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
Blank WG553359	477288	5.7	769585	6.18	106432	7.88	340550	11.06
L533934-02	488683	5.69	783016	6.18	106436	7.87	336755	11.06
L533934-06	383441	5.69	649818	6.18	86477	7.88	162217	11.06 *
L533934-19	511732	5.69	815136	6.18	113638	7.87	354064	11.06
L533934-23	472733	5.69	777041	6.18	106372	7.88	336033	11.07
L533934-24	519998	5.69	831018	6.18	110345	7.88	351381	11.06
L533934-25	526768	5.69	823229	6.18	112226	7.88	342664	11.06
L533934-26	517335	5.69	811632	6.18	111652	7.88	351502	11.06
LCS WG553359	516406	5.69	830308	6.18	117065	7.88	350294	11.07
LCSD WG553359	496941	5.69	793750	6.18	111814	7.88	338037	11.06
MS WG553359	479765	5.69	773996	6.18	109313	7.88	322309	11.06
MSD WG553359	476952	5.69	777330	6.18	108035	7.88	321330	11.06



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Water - mg/L
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553360
Analysis Date: 9/1/2011 Analyst: 74
Instrument ID: VOCMS4
Sample Numbers: L533934-18

Internal Standard Response and Retention Time Summary

FileID:0901_48.D Date:9/1/2011 Time:7:52 PM

	IS1 Response	RT	IS2 Response	RT	IS3 Response	RT	IS4 Response	RT
12 Hour Std	311206	6.02	532050	6.53	75821	8.16	228261	11.01
Upper Limit	622412	6.52	1064100	7.03	151642	8.66	456522	11.51
Lower Limit	155603	5.52	266025	6.03	37910.5	7.66	114130.5	10.51

Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
Blank WG553360	298316	6.02	494340	6.52	73645	8.16	221612	11.01
L533934-18	261852	6.02	440554	6.52	65703	8.16	191083	11.01
LCS WG553360	341609	6.03	571298	6.53	79677	8.16	243177	11
LCSD WG553360	338463	6.02	569555	6.53	80986	8.16	241023	11
MS WG553360	330307	6.03	554025	6.53	76525	8.16	235010	11.01
MSD WG553360	327900	6.02	551093	6.53	78897	8.16	241159	11



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553769
Analysis Date: 9/6/2011 Analyst: 74
Instrument ID: VOCMS25
Sample Numbers: L533934-21, -01, -27

Internal Standard Response and Retention Time Summary

FileID:0906_02.D

Date:9/6/2011

Time:9:42 AM

	IS1 Response	RT	IS2 Response	RT	IS3 Response	RT	IS4 Response	RT
12 Hour Std	193322	5.27	340635	5.77	56117	7.49	153171	10.79
Upper Limit	386644	5.77	681270	6.27	112234	7.99	306342	11.29
Lower Limit	96661	4.77	170317.5	5.27	28058.5	6.99	76585.5	10.29

Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
Blank WG553769	175662	5.27	313009	5.76	50222	7.49	131436	10.79
L533934-01	259901	5.27	454974	5.76	70095	7.49	215252	10.79
L533934-21	207958	5.26	366823	5.76	58215	7.49	175140	10.79
L533934-27	243356	5.26	425805	5.76	66901	7.49	202338	10.78
LCS WG553769	188261	5.27	328841	5.77	53494	7.49	147882	10.79
LCSD WG553769	189034	5.27	334742	5.76	54110	7.49	149690	10.79
MS WG553769	180730	5.27	329050	5.76	55118	7.49	145389	10.79
MSD WG553769	188863	5.27	340678	5.76	54210	7.49	148592	10.79



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG553908
Analysis Date: 9/7/2011 Analyst: 498
Instrument ID: VOCMS2
Sample Numbers: L533934-04

Internal Standard Response and Retention Time Summary

FileID:0907_02.D

Date:9/7/2011

Time:2:55 AM

	IS1 Response	RT	IS2 Response	RT	IS3 Response	RT	IS4 Response	RT
12 Hour Std	220140	5.69	384227	6.14	49368	7.66	191514	10.52
Upper Limit	440280	6.19	768454	6.64	98736	8.16	383028	11.02
Lower Limit	110070	5.19	192113.5	5.64	24684	7.16	95757	10.02

Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
Blank WG553908	196647	5.69	368015	6.14	43907	7.67	159155	10.52
L533934-04	268248	5.69	498098	6.14	57399	7.67	231326	10.52
LCS WG553908	232425	5.69	393803	6.14	52705	7.67	194483	10.52
LCSD WG553908	240899	5.69	412501	6.14	53785	7.67	205379	10.52
MS WG553908	243952	5.69	416589	6.14	54396	7.67	208448	10.52
MSD WG553908	208145	5.69	360719	6.14	47663	7.67	181294	10.52



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Volatile Organic Compounds by Method 8260B

Project No: Matrix: Soil - mg/kg
Project: EnCana Pavillion W7 EPA ID: TN00003
Collection Date: 8/29/2011 Analytic Batch: WG554163
Analysis Date: 9/8/2011 Analyst: 498
Instrument ID: VOCMS2
Sample Numbers: L533934-03

Internal Standard Response and Retention Time Summary

FileID:0908_02.D

Date:9/8/2011

Time:9:37 AM

	IS1 Response	RT	IS2 Response	RT	IS3 Response	RT	IS4 Response	RT
12 Hour Std	263556	5.69	452251	6.14	57983	7.67	214500	10.52
Upper Limit	527112	6.19	904502	6.64	115966	8.17	429000	11.02
Lower Limit	131778	5.19	226125.5	5.64	28991.5	7.17	107250	10.02

Sample ID	Response	RT	Response	RT	Response	RT	Response	RT
Blank WG554163	215264	5.69	401214	6.14	47925	7.67	166602	10.52
L533934-03	262933	5.69	482827	6.14	60479	7.67	230343	10.52
LCS WG554163	253258	5.69	434541	6.14	56164	7.67	209210	10.52
LCSD WG554163	236633	5.69	402565	6.14	51191	7.67	193517	10.52
MS WG554163	258357	5.69	447159	6.14	57635	7.67	210641	10.52
MSD WG554163	252477	5.69	445161	6.14	58905	7.67	209449	10.52



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: TPH (GC/FID) High Fraction by Method 8015

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/3/2011 Analytic Batch: WG553399

Instrument ID: SVGC2 Analyst: 267

Sample Numbers: L533934-20, -10, -22, -05, -19, -07, -21, -08, -23 Extraction Date: 9/1/2011

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) High Fraction		<4.00	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Extractable Petroleum Hydrocarbon	60.0	57.7	96.1	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Extractable Petroleum Hydrocarbon	60.0	60.0	100	70 - 130	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: TPH (GC/FID) High Fraction by Method 8015

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553587

Analysis Date: 9/5/2011

Analyst: 267

Instrument ID: SVGC2

Extraction Date: 9/3/2011

Sample Numbers: L533934-24, -12, -04, -02, -01, -14, -17, -03

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) High Fraction		<4.00	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Extractable Petroleum Hydrocarbon	60.0	53.8	89.6	50 - 100	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Extractable Petroleum Hydrocarbon	60.0	58.0	96.6	50 - 100	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: TPH (GC/FID) High Fraction by Method 8015

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553867

Analysis Date: 9/7/2011

Analyst: 280

Instrument ID: SVGC16

Extraction Date: 9/6/2011

Sample Numbers: L533934-25, -09, -26, -27

Method Blank

Analyte	CAS	PQL	Qualifiers
TPH (GC/FID) High Fraction		<4.00	

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Extractable Petroleum Hydrocarbon	60.0	49.6	82.7	70 - 130	

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Extractable Petroleum Hydrocarbon	60.0	51.5	85.8	70 - 130	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Diesel Range Organics by Method 8015

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/3/2011

Instrument ID: SVGC2

Sample Numbers: L533934-20, -10, -22, -05, -19, -07, -21, -08, -23

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553399

Analyst: 267

Extraction Date: 9/1/2011

Surrogate Summary

Laboratory	o-Terphenyl	
Sample ID	ppm	% Rec
Blank WG553399	0.732	91.4
LCS WG553399	0.641	80.2
LCSD WG553399	0.675	84.3
L533934-23	0.526	65.8
MS WG553399	0.606	75.7
MSD WG553399	0.571	71.4
L533934-05	0.626	78.3
L533934-07	0.631	78.9
L533934-08	0.655	81.9
L533934-10	0.607	75.9
L533934-19	0.646	80.7
L533934-22	0.504	63.0
L533934-20 10x	1.14	142
L533934-21 10x	0.982	123

o-Terphenyl

True Value: 0.8ppm Limits: 50 - 150



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Diesel Range Organics by Method 8015

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/5/2011

Instrument ID: SVGC2

Sample Numbers: L533934-24, -12, -04, -02, -01, -14, -17, -03

Matrix: Soil - mg/kg
EPA ID: TN00003
Analytic Batch: WG553587
Analyst: 267
Extraction Date: 9/3/2011

Surrogate Summary

Laboratory	o-Terphenyl	
Sample ID	ppm	% Rec
Blank WG553587	0.764	95.5
LCS WG553587	0.673	84.2
LCSD WG553587	0.722	90.2
L533934-02	0.658	82.3
L533934-04	0.620	77.4
L533934-12	0.442	55.2
L533934-14	0.561	70.1
L533934-17	0.530	66.3
L533934-01 5x	0.712	89.0
L533934-03 10x	1.05	131
L533934-24 5x	0.518	64.7
MS WG553587	0.600	75.1
MSD WG553587	0.724	90.5

o-Terphenyl

True Value: 0.8ppm Limits: 50 - 150



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Diesel Range Organics by Method 8015

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/7/2011

Instrument ID: SVGC16

Sample Numbers: L533934-25, -09, -26, -27

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553867

Analyst: 280

Extraction Date: 9/6/2011

Surrogate Summary

Laboratory	o-Terphenyl	
Sample ID	ppm	% Rec
Blank WG553867	0.640	80.0
LCS WG553867	0.716	89.5
LCSD WG553867	0.732	91.5
L533934-09	0.633	79.1
L533934-25 10x	0.668	83.5
L533934-26 20x	0.000	0.0 J7
L533934-27 20x	0.000	0.0 J7

o-Terphenyl

True Value: 0.8ppm Limits: 50 - 150



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: TPH (GC/FID) High Fraction by Method 8015

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/3/2011 Analytic Batch: WG553399

Instrument ID: SVG C2 Analyst: 267

Sample Numbers: L533934-20, -10, -22, -05, -19, -07, -21, -08, -23 Extraction Date: 9/1/2011

Analyte	Laboratory Control Sample/				Laboratory Control Sample Duplicate				Control	Control	Qualifier
	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	RPD			
Extractable Petroleum	60.0	57.7	96.1	60.0	100	70-130		4.0	20		

Matrix Spike/Matrix Spike Duplicate

L533934-23

Analyte	L533934-23				Control	% Rec	Control	RPD			
	Spike Value	Sample	MS	% Rec							
Extractable Petroleum	60.0	0.000	63.0	105	59.6	99.3	70-130	5.6	20		



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: TPH (GC/FID) High Fraction by Method 8015

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/5/2011 Analytic Batch: WG553587

Instrument ID: SVG C2 Analyst: 267

Sample Numbers: L533934-24, -12, -04, -02, -01, -14, -17, -03 Extraction Date: 9/3/2011

Analyte	Laboratory Control Sample/				Laboratory Control Sample Duplicate				Control	Control	Qualifier
	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	Qualifier	RPD			
Extractable Petroleum	60.0	53.8	89.6	58.0	96.6	50-100			7.5	20	

Matrix Spike/Matrix Spike Duplicate

L533934-24

Analyte	L533934-24				Control	% Rec	Control	RPD			
	Spike Value	Sample	MS	% Rec					MSD	Rec	Limits
Extractable Petroleum	60.0	1400	909	-818	888	-853	50-100	V		2.3	20



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: TPH (GC/FID) High Fraction by Method 8015

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553867

Analysis Date: 9/7/2011

Analyst: 280

Instrument ID: SVGC16

Extraction Date: 9/6/2011

Sample Numbers: L533934-25, -09, -26, -27

Analyte	Laboratory Control Sample/ Laboratory Control Sample Duplicate						Control Qualifier	Control Limits	Control Qualifier
	Spike	LCS	% Rec	LCSD	% Rec	Control Limits			
Extractable Petroleum	60.0	49.6	82.7	51.5	85.8	70-130		3.7	20



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/3/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-06

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553395

Analyst: 377

Extraction Date: 9/1/2011

Method Blank

Analyte	CAS	PQL	Qualifiers
n-Nitrosodimethylamine	62-75-9	<0.330	
Bis(2-chloroethyl)ether	111-44-4	<0.330	
Phenol	108-95-2	<0.330	
2-Chlorophenol	95-57-8	<0.330	
Bis(2-chloroisopropyl)ether	108-60-1	<0.330	
Hexachloroethane	67-72-1	<0.330	
n-Nitrosodi-n-propylamine	621-64-7	<0.330	
Nitrobenzene	98-95-3	<0.330	
Isophorone	78-59-1	<0.330	
2-Nitrophenol	88-75-5	<0.330	
2,4-Dimethylphenol	105-67-9	<0.330	
Bis(2-chlorethoxy)methane	111-91-1	<0.330	
2,4-Dichlorophenol	120-83-2	<0.330	
1,2,4-Trichlorobenzene	120-82-1	<0.330	
Naphthalene	91-20-3	<0.033	
Hexachloro-1,3-butadiene	87-68-3	<0.330	
4-Chloro-3-methylphenol	59-50-7	<0.330	
Hexachlorocyclopentadiene	77-47-4	<0.330	
2,4,6-Trichlorophenol	88-06-2	<0.330	
2-Chloronaphthalene	91-58-7	<0.033	
Acenaphthylene	208-96-8	<0.033	
Dimethyl phthalate	131-11-3	<0.330	
2,6-Dinitrotoluene	606-20-2	<0.330	
Acenaphthene	83-32-9	<0.033	
2,4-Dinitrophenol	51-28-5	<0.330	
2,4-Dinitrotoluene	121-14-2	<0.330	
4-Nitrophenol	100-02-7	<0.330	
Fluorene	86-73-7	<0.033	
4-Chlorophenyl-phenylether	7005-72-3	<0.330	
Diethyl phthalate	84-66-2	<0.330	
4,6-Dinitro-2-methylphenol	534-52-1	<0.330	
n-Nitrosodiphenylamine	86-30-6	<0.330	
4-Bromophenyl-phenylether	101-55-3	<0.330	
Hexachlorobenzene	118-74-1	<0.330	
Pentachlorophenol	87-86-5	<0.330	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/3/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-06

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553395

Analyst: 377

Extraction Date: 9/1/2011

Method Blank

Analyte	CAS	PQL	Qualifiers
Phenanthrene	85-01-8	<0.033	
Anthracene	120-12-7	<0.033	
Di-n-butyl phthalate	84-74-2	<0.330	
Fluoranthene	206-44-0	<0.033	
Benzidine	92-87-5	<0.330	
Pyrene	129-00-0	<0.033	
Benzylbutyl phthalate	85-68-7	<0.330	
Benzo(a)anthracene	56-55-3	<0.033	
Chrysene	218-01-9	<0.033	
Bis(2-ethylhexyl)phthalate	117-81-7	<0.330	
Di-n-octyl phthalate	117-84-0	<0.330	
Benzo(b)fluoranthene	205-99-2	<0.033	
Benzo(k)fluoranthene	207-08-9	<0.033	
Benzo(a)pyrene	50-32-8	<0.033	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.033	
Dibenz(a,h)anthracene	53-70-3	<0.033	
Benzo(g,h,i)perylene	191-24-2	<0.033	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Matrix: Soil - mg/kg
EPA ID: TN00003

Analytic Batch: WG553588

Analyst: 377

Extraction Date: 9/3/2011

Method Blank

Analyte	CAS	PQL	Qualifiers
n-Nitrosodimethylamine	62-75-9	<0.335	
Bis(2-chloroethyl)ether	111-44-4	<0.330	
Phenol	108-95-2	<0.335	
2-Chlorophenol	95-57-8	<0.335	
Bis(2-chloroisopropyl)ether	108-60-1	<0.330	
Hexachloroethane	67-72-1	<0.330	
n-Nitrosodi-n-propylamine	621-64-7	<0.330	
Nitrobenzene	98-95-3	<0.330	
Isophorone	78-59-1	<0.330	
2-Nitrophenol	88-75-5	<0.330	
2,4-Dimethylphenol	105-67-9	<0.330	
Bis(2-chlorethoxy)methane	111-91-1	<0.330	
2,4-Dichlorophenol	120-83-2	<0.330	
1,2,4-Trichlorobenzene	120-82-1	<0.330	
Naphthalene	91-20-3	<0.033	
Hexachloro-1,3-butadiene	87-68-3	<0.330	
4-Chloro-3-methylphenol	59-50-7	<0.330	
Hexachlorocyclopentadiene	77-47-4	<0.330	
2,4,6-Trichlorophenol	88-06-2	<0.330	
2-Chloronaphthalene	91-58-7	<0.033	
Acenaphthylene	208-96-8	<0.033	
Dimethyl phthalate	131-11-3	<0.330	
2,6-Dinitrotoluene	606-20-2	<0.330	
Acenaphthene	83-32-9	<0.033	
2,4-Dinitrophenol	51-28-5	<0.330	
2,4-Dinitrotoluene	121-14-2	<0.330	
4-Nitrophenol	100-02-7	<0.330	
Fluorene	86-73-7	<0.033	
4-Chlorophenyl-phenylether	7005-72-3	<0.330	
Diethyl phthalate	84-66-2	<0.330	
4,6-Dinitro-2-methylphenol	534-52-1	<0.330	
n-Nitrosodiphenylamine	86-30-6	<0.330	
4-Bromophenyl-phenylether	101-55-3	<0.330	
Hexachlorobenzene	118-74-1	<0.330	
Pentachlorophenol	87-86-5	<0.330	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553588

Analyst: 377

Extraction Date: 9/3/2011

Method Blank

Analyte	CAS	PQL	Qualifiers
Phenanthrene	85-01-8	<0.033	
Anthracene	120-12-7	<0.033	
Di-n-butyl phthalate	84-74-2	<0.330	
Fluoranthene	206-44-0	<0.033	
Benzidine	92-87-5	<0.335	
Pyrene	129-00-0	<0.033	
Benzylbutyl phthalate	85-68-7	<0.330	
Benzo(a)anthracene	56-55-3	<0.033	
Chrysene	218-01-9	<0.033	
Bis(2-ethylhexyl)phthalate	117-81-7	<0.330	
Di-n-octyl phthalate	117-84-0	<0.330	
Benzo(b)fluoranthene	205-99-2	<0.033	
Benzo(k)fluoranthene	207-08-9	<0.033	
Benzo(a)pyrene	50-32-8	<0.033	
Indeno(1,2,3-cd)pyrene	193-39-5	<0.033	
Dibenz(a,h)anthracene	53-70-3	<0.033	
Benzo(g,h,i)perylene	191-24-2	<0.033	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/3/2011 6:07:00 PM Analytic Batch: WG553395
Instrument ID: BNAMS2 Analyst: 377
Sample Numbers: L533934-06 Extraction Date: 9/1/2011

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
1,2,4-Trichlorobenzene	0.333	0.213	64.0	48 - 87	
2,4,6-Trichlorophenol	0.333	0.234	70.4	50 - 98	
2,4-Dichlorophenol	0.333	0.241	72.3	56 - 96	
2,4-Dimethylphenol	0.333	0.254	76.3	52 - 101	
2,4-Dinitrophenol	0.333	0.221	66.4	10 - 109	
2,4-Dinitrotoluene	0.333	0.218	65.5	54 - 103	
2,6-Dinitrotoluene	0.333	0.226	67.8	53 - 99	
2-Chloronaphthalene	0.333	0.222	66.7	55 - 96	
2-Chlorophenol	0.333	0.229	68.7	52 - 88	
2-Nitrophenol	0.333	0.245	73.5	55 - 106	
3,3-Dichlorobenzidine	0.333	0.183	54.8	36 - 84	
4,6-Dinitro-2-methylphenol	0.333	0.216	64.7	24 - 98	
4-Bromophenyl-phenylether	0.333	0.221	66.4	58 - 111	
4-Chloro-3-methylphenol	0.333	0.250	75.1	58 - 98	
4-Chlorophenyl-phenylether	0.333	0.220	66.1	59 - 103	
4-Nitrophenol	0.333	0.215	64.5	34 - 101	
Acenaphthene	0.333	0.222	66.7	55 - 96	
Acenaphthylene	0.333	0.239	71.7	61 - 107	
Anthracene	0.333	0.235	70.6	58 - 105	
Benzidine	0.333	0.0486	14.6	10 - 21	
Benzo(a)anthracene	0.333	0.232	69.6	56 - 103	
Benzo(a)pyrene	0.333	0.236	71.0	57 - 103	
Benzo(b)fluoranthene	0.333	0.243	72.9	52 - 106	
Benzo(g,h,i)perylene	0.333	0.259	77.7	47 - 112	
Benzo(k)fluoranthene	0.333	0.242	72.6	53 - 104	
Benzylbutyl phthalate	0.333	0.253	75.9	61 - 118	
Bis(2-chlorethoxy)methane	0.333	0.239	71.7	58 - 104	
Bis(2-chloroethyl)ether	0.333	0.234	70.1	51 - 103	
Bis(2-chloroisopropyl)ether	0.333	0.241	72.5	56 - 95	
Bis(2-ethylhexyl)phthalate	0.333	0.249	74.9	56 - 120	
Chrysene	0.333	0.222	66.5	55 - 102	
Dibenz(a,h)anthracene	0.333	0.255	76.5	49 - 111	
Diethyl phthalate	0.333	0.225	67.7	61 - 105	
Dimethyl phthalate	0.333	0.221	66.2	60 - 106	
Di-n-butyl phthalate	0.333	0.230	69.2	59 - 114	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/3/2011 6:07:00 PM Analytic Batch: WG553395
Instrument ID: BNAMS2 Analyst: 377
Sample Numbers: L533934-06 Extraction Date: 9/1/2011

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Di-n-octyl phthalate	0.333	0.252	75.8	51 - 119	
Fluoranthene	0.333	0.229	68.9	59 - 108	
Fluorene	0.333	0.217	65.1	59 - 100	
Hexachloro-1,3-butadiene	0.333	0.237	71.1	53 - 106	
Hexachlorobenzene	0.333	0.218	65.3	50 - 108	
Hexachlorocyclopentadiene	0.333	0.164	49.3	36 - 117	
Hexachloroethane	0.333	0.230	69.2	45 - 83	
Indeno(1,2,3-cd)pyrene	0.333	0.252	75.8	50 - 110	
Isophorone	0.333	0.208	62.5	51 - 99	
Naphthalene	0.333	0.234	70.4	55 - 91	
Nitrobenzene	0.333	0.246	73.8	47 - 92	
n-Nitrosodimethylamine	0.333	0.221	66.4	31 - 107	
n-Nitrosodi-n-propylamine	0.333	0.250	75.0	52 - 103	
n-Nitrosodiphenylamine	0.333	0.241	72.3	57 - 121	
Pentachlorophenol	0.333	0.203	61.0	10 - 89	
Phenanthrene	0.333	0.235	70.5	55 - 103	
Phenol	0.333	0.239	71.8	49 - 99	
Pyrene	0.333	0.231	69.3	54 - 104	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553395

Analysis Date: 9/3/2011 6:07:00 PM

Analyst: 377

Instrument ID: BNAMS2

Extraction Date: 9/1/2011

Sample Numbers: L533934-06

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
1,2,4-Trichlorobenzene	0.333	0.191	57.4	48 - 87	
2,4,6-Trichlorophenol	0.333	0.220	66.1	50 - 98	
2,4-Dichlorophenol	0.333	0.224	67.3	56 - 96	
2,4-Dimethylphenol	0.333	0.226	67.8	52 - 101	
2,4-Dinitrophenol	0.333	0.220	66.1	10 - 109	
2,4-Dinitrotoluene	0.333	0.225	67.5	54 - 103	
2,6-Dinitrotoluene	0.333	0.219	65.8	53 - 99	
2-Chloronaphthalene	0.333	0.209	62.6	55 - 96	
2-Chlorophenol	0.333	0.214	64.3	52 - 88	
2-Nitrophenol	0.333	0.218	65.5	55 - 106	
3,3-Dichlorobenzidine	0.333	0.183	54.9	36 - 84	
4,6-Dinitro-2-methylphenol	0.333	0.223	67.0	24 - 98	
4-Bromophenyl-phenylether	0.333	0.232	69.8	58 - 111	
4-Chloro-3-methylphenol	0.333	0.236	70.9	58 - 98	
4-Chlorophenyl-phenylether	0.333	0.213	64.0	59 - 103	
4-Nitrophenol	0.333	0.217	65.3	34 - 101	
Acenaphthene	0.333	0.218	65.5	55 - 96	
Acenaphthylene	0.333	0.227	68.1	61 - 107	
Anthracene	0.333	0.219	65.8	58 - 105	
Benzidine	0.333	0.0493	14.8	10 - 21	
Benzo(a)anthracene	0.333	0.222	66.8	56 - 103	
Benzo(a)pyrene	0.333	0.224	67.3	57 - 103	
Benzo(b)fluoranthene	0.333	0.215	64.7	52 - 106	
Benzo(g,h,i)perylene	0.333	0.230	69.0	47 - 112	
Benzo(k)fluoranthene	0.333	0.219	65.7	53 - 104	
Benzylbutyl phthalate	0.333	0.238	71.6	61 - 118	
Bis(2-chlorethoxy)methane	0.333	0.220	66.0	58 - 104	
Bis(2-chloroethyl)ether	0.333	0.225	67.4	51 - 103	
Bis(2-chloroisopropyl)ether	0.333	0.223	66.9	56 - 95	
Bis(2-ethylhexyl)phthalate	0.333	0.243	72.8	56 - 120	
Chrysene	0.333	0.218	65.5	55 - 102	
Dibenz(a,h)anthracene	0.333	0.238	71.5	49 - 111	
Diethyl phthalate	0.333	0.223	66.8	61 - 105	
Dimethyl phthalate	0.333	0.219	65.8	60 - 106	
Di-n-butyl phthalate	0.333	0.235	70.5	59 - 114	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/3/2011 6:07:00 PM Analytic Batch: WG553395
Instrument ID: BNAMS2 Analyst: 377
Sample Numbers: L533934-06 Extraction Date: 9/1/2011

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Di-n-octyl phthalate	0.333	0.244	73.4	51 - 119	
Fluoranthene	0.333	0.227	68.3	59 - 108	
Fluorene	0.333	0.222	66.6	59 - 100	
Hexachloro-1,3-butadiene	0.333	0.211	63.2	53 - 106	
Hexachlorobenzene	0.333	0.211	63.3	50 - 108	
Hexachlorocyclopentadiene	0.333	0.168	50.5	36 - 117	
Hexachloroethane	0.333	0.206	61.8	45 - 83	
Indeno(1,2,3-cd)pyrene	0.333	0.233	70.1	50 - 110	
Isophorone	0.333	0.178	53.5	51 - 99	
Naphthalene	0.333	0.212	63.7	55 - 91	
Nitrobenzene	0.333	0.214	64.2	47 - 92	
n-Nitrosodimethylamine	0.333	0.197	59.0	31 - 107	
n-Nitrosodi-n-propylamine	0.333	0.224	67.3	52 - 103	
n-Nitrosodiphenylamine	0.333	0.235	70.5	57 - 121	
Pentachlorophenol	0.333	0.190	56.9	10 - 89	
Phenanthrene	0.333	0.221	66.4	55 - 103	
Phenol	0.333	0.224	67.3	49 - 99	
Pyrene	0.333	0.217	65.1	54 - 104	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/4/2011 4:36:00 PM Analytic Batch: WG553588
Instrument ID: BNAMS4 Analyst: 377
Extraction Date: 9/3/2011
Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
1,2,4-Trichlorobenzene	0.333	0.195	58.7	48 - 87	
2,4,6-Trichlorophenol	0.333	0.229	68.9	50 - 98	
2,4-Dichlorophenol	0.333	0.226	67.8	56 - 96	
2,4-Dimethylphenol	0.333	0.224	67.2	52 - 101	
2,4-Dinitrophenol	0.333	0.205	61.7	10 - 109	
2,4-Dinitrotoluene	0.333	0.230	69.0	54 - 103	
2,6-Dinitrotoluene	0.333	0.223	66.9	53 - 99	
2-Chloronaphthalene	0.333	0.202	60.5	55 - 96	
2-Chlorophenol	0.333	0.203	60.9	52 - 88	
2-Nitrophenol	0.333	0.212	63.6	55 - 106	
3,3-Dichlorobenzidine	0.333	0.207	62.3	36 - 84	
4,6-Dinitro-2-methylphenol	0.333	0.234	70.2	24 - 98	
4-Bromophenyl-phenylether	0.333	0.232	69.6	58 - 111	
4-Chloro-3-methylphenol	0.333	0.215	64.6	58 - 98	
4-Chlorophenyl-phenylether	0.333	0.217	65.1	59 - 103	
4-Nitrophenol	0.333	0.173	52.0	34 - 101	
Acenaphthene	0.333	0.225	67.5	55 - 96	
Acenaphthylene	0.333	0.232	69.6	61 - 107	
Anthracene	0.333	0.217	65.2	58 - 105	
Benzidine	0.333	0.0373	11.2	10 - 21	
Benzo(a)anthracene	0.333	0.233	69.8	56 - 103	
Benzo(a)pyrene	0.333	0.226	68.0	57 - 103	
Benzo(b)fluoranthene	0.333	0.221	66.4	52 - 106	
Benzo(g,h,i)perylene	0.333	0.233	70.0	47 - 112	
Benzo(k)fluoranthene	0.333	0.230	69.2	53 - 104	
Benzylbutyl phthalate	0.333	0.217	65.1	61 - 118	
Bis(2-chlorethoxy)methane	0.333	0.203	60.8	58 - 104	
Bis(2-chloroethyl)ether	0.333	0.194	58.4	51 - 103	
Bis(2-chloroisopropyl)ether	0.333	0.213	63.9	56 - 95	
Bis(2-ethylhexyl)phthalate	0.333	0.220	66.1	56 - 120	
Chrysene	0.333	0.235	70.6	55 - 102	
Dibenz(a,h)anthracene	0.333	0.222	66.6	49 - 111	
Diethyl phthalate	0.333	0.224	67.3	61 - 105	
Dimethyl phthalate	0.333	0.231	69.5	60 - 106	
Di-n-butyl phthalate	0.333	0.228	68.4	59 - 114	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/4/2011 4:36:00 PM Analytic Batch: WG553588

Instrument ID: BNAMS4 Analyst: 377

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26 Extraction Date: 9/3/2011

Laboratory Control Sample (LCS)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Di-n-octyl phthalate	0.333	0.221	66.4	51 - 119	
Fluoranthene	0.333	0.241	72.5	59 - 108	
Fluorene	0.333	0.214	64.3	59 - 100	
Hexachloro-1,3-butadiene	0.333	0.232	69.6	53 - 106	
Hexachlorobenzene	0.333	0.221	66.3	50 - 108	
Hexachlorocyclopentadiene	0.333	0.153	45.8	36 - 117	
Hexachloroethane	0.333	0.204	61.2	45 - 83	
Indeno(1,2,3-cd)pyrene	0.333	0.225	67.7	50 - 110	
Isophorone	0.333	0.159	47.8	51 - 99	J4
Naphthalene	0.333	0.204	61.3	55 - 91	
Nitrobenzene	0.333	0.210	63.1	47 - 92	
n-Nitrosodimethylamine	0.333	0.189	56.8	31 - 107	
n-Nitrosodi-n-propylamine	0.333	0.203	60.9	52 - 103	
n-Nitrosodiphenylamine	0.333	0.206	61.8	57 - 121	
Pentachlorophenol	0.333	0.210	63.0	10 - 89	
Phenanthrene	0.333	0.218	65.4	55 - 103	
Phenol	0.333	0.189	56.9	49 - 99	
Pyrene	0.333	0.212	63.7	54 - 104	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/4/2011 4:36:00 PM Analytic Batch: WG553588
Instrument ID: BNAMS4 Analyst: 377
Extraction Date: 9/3/2011
Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
1,2,4-Trichlorobenzene	0.333	0.218	65.6	48 - 87	
2,4,6-Trichlorophenol	0.333	0.254	76.3	50 - 98	
2,4-Dichlorophenol	0.333	0.236	70.9	56 - 96	
2,4-Dimethylphenol	0.333	0.232	69.6	52 - 101	
2,4-Dinitrophenol	0.333	0.230	69.1	10 - 109	
2,4-Dinitrotoluene	0.333	0.251	75.5	54 - 103	
2,6-Dinitrotoluene	0.333	0.248	74.6	53 - 99	
2-Chloronaphthalene	0.333	0.224	67.2	55 - 96	
2-Chlorophenol	0.333	0.206	61.8	52 - 88	
2-Nitrophenol	0.333	0.238	71.5	55 - 106	
3,3-Dichlorobenzidine	0.333	0.224	67.4	36 - 84	
4,6-Dinitro-2-methylphenol	0.333	0.241	72.4	24 - 98	
4-Bromophenyl-phenylether	0.333	0.253	75.9	58 - 111	
4-Chloro-3-methylphenol	0.333	0.229	68.7	58 - 98	
4-Chlorophenyl-phenylether	0.333	0.234	70.4	59 - 103	
4-Nitrophenol	0.333	0.215	64.7	34 - 101	
Acenaphthene	0.333	0.240	72.0	55 - 96	
Acenaphthylene	0.333	0.241	72.4	61 - 107	
Anthracene	0.333	0.243	73.0	58 - 105	
Benzidine	0.333	0.0430	12.9	10 - 21	
Benzo(a)anthracene	0.333	0.248	74.5	56 - 103	
Benzo(a)pyrene	0.333	0.237	71.1	57 - 103	
Benzo(b)fluoranthene	0.333	0.227	68.3	52 - 106	
Benzo(g,h,i)perylene	0.333	0.245	73.4	47 - 112	
Benzo(k)fluoranthene	0.333	0.252	75.8	53 - 104	
Benzylbutyl phthalate	0.333	0.228	68.4	61 - 118	
Bis(2-chlorethoxy)methane	0.333	0.221	66.5	58 - 104	
Bis(2-chloroethyl)ether	0.333	0.197	59.2	51 - 103	
Bis(2-chloroisopropyl)ether	0.333	0.196	58.9	56 - 95	
Bis(2-ethylhexyl)phthalate	0.333	0.237	71.3	56 - 120	
Chrysene	0.333	0.244	73.2	55 - 102	
Dibenz(a,h)anthracene	0.333	0.232	69.7	49 - 111	
Diethyl phthalate	0.333	0.245	73.5	61 - 105	
Dimethyl phthalate	0.333	0.236	70.9	60 - 106	
Di-n-butyl phthalate	0.333	0.243	73.1	59 - 114	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/4/2011 4:36:00 PM Analytic Batch: WG553588

Instrument ID: BNAMS4 Analyst: 377

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26 Extraction Date: 9/3/2011

Laboratory Control Sample Duplicate (LCSD)

Analyte	True Value	Found	Recovery %	Control Limits	Qualifiers
Di-n-octyl phthalate	0.333	0.239	71.6	51 - 119	
Fluoranthene	0.333	0.246	73.8	59 - 108	
Fluorene	0.333	0.237	71.1	59 - 100	
Hexachloro-1,3-butadiene	0.333	0.244	73.2	53 - 106	
Hexachlorobenzene	0.333	0.239	71.7	50 - 108	
Hexachlorocyclopentadiene	0.333	0.170	51.1	36 - 117	
Hexachloroethane	0.333	0.201	60.3	45 - 83	
Indeno(1,2,3-cd)pyrene	0.333	0.239	71.7	50 - 110	
Isophorone	0.333	0.187	56.2	51 - 99	
Naphthalene	0.333	0.219	65.7	55 - 91	
Nitrobenzene	0.333	0.227	68.1	47 - 92	
n-Nitrosodimethylamine	0.333	0.201	60.4	31 - 107	
n-Nitrosodi-n-propylamine	0.333	0.199	59.7	52 - 103	
n-Nitrosodiphenylamine	0.333	0.222	66.5	57 - 121	
Pentachlorophenol	0.333	0.228	68.5	10 - 89	
Phenanthrene	0.333	0.236	70.9	55 - 103	
Phenol	0.333	0.194	58.2	49 - 99	
Pyrene	0.333	0.230	69.2	54 - 104	



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553395

Analysis Date: 9/3/2011

Analyst: 377

Instrument ID: BNAMS2

Extraction Date: 9/1/2011

Sample Numbers: L533934-06

Surrogate Summary

Laboratory	NBZ		FBP		TPH		2FP		PHL		TBP	
Sample ID	ppb	% Rec										
LCS WG553395	286	85.9	275	82.7	278	83.6	590	88.6	652	97.9	548	82.2
LCSD WG553395	248	74.6	254	76.2	243	72.9	508	76.3	599	90.0	566	84.9
Blank WG553395	229	68.9	267	80.1	270	81.0	535	80.3	621	93.2	526	79.0
MS WG553395	324	97.2	334	100	281	84.4	587	88.1	682	102	623	93.6
MSD WG553395	329	98.8	311	93.4	280	84.2	611	91.7	711	107	623	93.5
L533934-06	234	70.4	245	73.6	398	120	533	80.0	591	88.7	605	90.8

NBZ - Nitrobenzene-d5	20-114
FBP - 2-Fluorobiphenyl	37-119
TPH - Terphneyl-d14	15-174
2FP - 2-Fluorophenol	22-114
PHL - Phenol-d5	26-127
TBP - 2,4,6-Tribromophenol	16-136



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: BNAMS2

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553588

Analyst: 377

Extraction Date: 9/3/2011

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Surrogate Summary

Laboratory	NBZ		FBP		TPH		2FP		PHL		TBP	
Sample ID	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec	ppb	% Rec
LCS WG553588	238	71.6	267	80.2	265	79.5	477	71.6	558	83.7	621	93.2
LCSD WG553588	249	74.7	270	81.2	271	81.4	426	63.9	513	77.0	634	95.1
Blank WG553588	204	61.3	275	82.6	271	81.5	468	70.3	548	82.3	583	87.6
L533934-01	246	73.8	335	101	339	102	470	70.5	602	90.5	839	126
L533934-02	172	51.6	215	64.5	203	60.9	365	54.8	468	70.3	515	77.4
L533934-04	293	87.9	322	96.7	289	86.9	522	78.4	613	92.0	705	106
L533934-15	255	76.6	311	93.3	324	97.4	511	76.8	631	94.7	731	110
L533934-03	000	00.0 J7	224	67.3	303	91.1	000	00.0 J7	000	00.0 J7	828	124
L533934-25	550	165	JB28	98.6	269	80.7	470	70.6	474	71.2	578	86.7
L533934-26	000	00.0 J7	000	00.0 J7	000	00.0 J7	000	00.0 J7	000	00.0 J7	000	00.0 J7

NBZ - Nitrobenzene-d5	20-114
FBP - 2-Fluorobiphenyl	37-119
TPH - Terphneyl-d14	15-174
2FP - 2-Fluorophenol	22-114
PHL - Phenol-d5	26-127
TBP - 2,4,6-Tribromophenol	16-136



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/3/2011 6:07:00 PM Analytic Batch: WG553395
Instrument ID: BNAMS2 Analyst: 377
Sample Numbers: L533934-06 Extraction Date: 9/1/2011

Matrix Spike/Matrix Spike Duplicate

L533676-02

Analyte	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
1,2,4-Trichlorobenzene	0.333	0.00000	0.249	74.9	0.249	74.7	27-118		0.3	23	
2,4,6-Trichlorophenol	0.333	0.00000	0.268	80.5	0.268	80.4	18-140		0.1	26	
2,4-Dichlorophenol	0.333	0.00000	0.257	77.3	0.278	83.6	30-134		7.8	23	
2,4-Dimethylphenol	0.333	0.00000	0.174	52.3	0.168	50.4	13-147		3.7	27	
2,4-Dinitrophenol	0.333	0.00000	0.267	80.1	0.256	77.0	10-110		4.0	40	
2,4-Dinitrotoluene	0.333	0.00000	0.273	81.9	0.284	85.4	12-146		4.2	25	
2,6-Dinitrotoluene	0.333	0.00000	0.278	83.4	0.274	82.3	10-150		1.3	23	
2-Chloronaphthalene	0.333	0.00000	0.270	81.1	0.267	80.2	31-127		1.1	23	
2-Chlorophenol	0.333	0.00000	0.252	75.6	0.270	81.1	26-120		7.1	21	
2-Nitrophenol	0.333	0.00000	0.285	85.6	0.280	84.2	10-156		1.7	24	
3,3-Dichlorobenzidine	0.333	0.00000	0.00370	1.1	0.00353	1.1	10-127	J6	4.6	40	
4,6-Dinitro-2-methylphenol	0.333	0.00000	0.268	80.4	0.240	72.0	10-124		11	40	
4-Bromophenyl-phenylether	0.333	0.00000	0.264	79.3	0.261	78.4	27-150		1.1	20	
4-Chloro-3-methylphenol	0.333	0.00000	0.279	83.8	0.277	83.1	24-140		0.8	22	
4-Chlorophenyl-phenylether	0.333	0.00000	0.259	77.8	0.251	75.4	27-142		3.1	21	
4-Nitrophenol	0.333	0.00000	0.279	83.6	0.279	83.9	10-166		0.3	35	
Acenaphthene	0.333	0.00000	0.271	81.5	0.285	85.7	30-132		5.0	21	
Acenaphthylene	0.333	0.00000	0.287	86.1	0.285	85.7	31-144		0.5	24	
Anthracene	0.333	0.00000	0.270	81.0	0.267	80.0	27-140		1.3	20	
Benzidine	0.333	0.00000	0.0209	6.3	0.00000	0.0	10-55	J6	200	36	J3
Benzo(a)anthracene	0.333	0.00000	0.272	81.6	0.274	82.2	22-139		0.7	22	
Benzo(a)pyrene	0.333	0.00000	0.282	84.7	0.298	89.5	16-148		5.6	21	
Benzo(b)fluoranthene	0.333	0.00000	0.280	84.0	0.294	88.4	13-152		5.0	24	
Benzo(g,h,i)perylene	0.333	0.00000	0.182	54.6	0.179	53.8	10-137		1.4	32	
Benzo(k)fluoranthene	0.333	0.00000	0.293	87.9	0.306	91.8	15-152		4.3	22	
Benzylbutyl phthalate	0.333	0.00000	0.315	94.6	0.313	93.9	20-168		0.7	23	
Bis(2-chlorethoxy)methane	0.333	0.00000	0.281	84.3	0.290	87.0	32-141		3.2	20	
Bis(2-chloroethyl)ether	0.333	0.00000	0.323	97.1	0.305	91.5	25-139		6.0	26	
Bis(2-chloroisopropyl)ether	0.333	0.00000	0.264	79.3	0.282	84.7	32-128		6.6	22	
Bis(2-ethylhexyl)phthalate	0.333	0.00000	0.317	95.2	0.316	94.9	20-163		0.3	24	
Chrysene	0.333	0.00000	0.261	78.4	0.269	80.9	20-139		3.1	23	
Dibenz(a,h)anthracene	0.333	0.00000	0.203	60.8	0.199	59.7	10-137		1.9	29	
Diethyl phthalate	0.333	0.00000	0.279	83.9	0.280	84.1	28-142		0.2	23	
Dimethyl phthalate	0.333	0.00000	0.267	80.2	0.272	81.7	31-142		1.8	22	
Di-n-butyl phthalate	0.333	0.00000	0.289	86.7	0.296	88.8	24-149		2.4	24	



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Tax I.D 62-0814289
Est. 1970

Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg
Collection Date: 8/29/2011 EPA ID: TN00003
Analysis Date: 9/3/2011 6:07:00 PM Analytic Batch: WG553395
Instrument ID: BNAMS2 Analyst: 377
Sample Numbers: L533934-06 Extraction Date: 9/1/2011

Matrix Spike/Matrix Spike Duplicate

L533676-02

Analyte	Spike Value	%		% Rec	Control Limits	% Rec Qualifier	% RPD	Control Limits	RPD Qual
		Sample	MS						
Di-n-octyl phthalate	0.333	0.00000	0.331	99.5	0.340	102	14-164	2.5	24
Fluoranthene	0.333	0.00000	0.282	84.6	0.268	80.5	24-145	4.9	29
Fluorene	0.333	0.00000	0.274	82.3	0.259	77.9	30-138	5.5	22
Hexachloro-1,3-butadiene	0.333	0.00000	0.271	81.5	0.280	84.0	29-136	3.0	22
Hexachlorobenzene	0.333	0.00000	0.237	71.1	0.237	71.2	26-136	0.1	20
Hexachlorocyclopentadiene	0.333	0.00000	0.125	37.5	0.116	34.8	10-124	7.4	33
Hexachloroethane	0.333	0.00000	0.263	79.0	0.280	84.2	21-107	6.4	27
Indeno(1,2,3-cd)pyrene	0.333	0.00000	0.203	61.1	0.200	60.1	10-139	1.6	32
Isophorone	0.333	0.00000	0.234	70.4	0.236	71.0	26-134	0.9	20
Naphthalene	0.333	0.00000	0.263	78.9	0.266	80.0	31-124	1.4	25
Nitrobenzene	0.333	0.00000	0.286	85.8	0.283	85.0	22-122	1.0	20
n-Nitrosodimethylamine	0.333	0.00000	0.270	81.2	0.291	87.5	18-126	7.5	27
n-Nitrosodi-n-propylamine	0.333	0.00000	0.289	86.8	0.294	88.2	24-141	1.5	20
n-Nitrosodiphenylamine	0.333	0.00000	0.272	81.6	0.264	79.4	16-128	2.7	25
Pentachlorophenol	0.333	0.00000	0.247	74.1	0.243	72.8	10-124	1.7	34
Phenanthrene	0.333	0.00000	0.279	83.7	0.274	82.4	25-139	1.5	25
Phenol	0.333	0.00000	0.247	74.0	0.258	77.6	22-129	4.6	25
Pyrene	0.333	0.00000	0.275	82.6	0.273	82.1	23-145	0.5	30



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553395

Analysis Date: 9/3/2011 6:07:00 PM

Analyst: 377

Instrument ID: BNAMS2

Extraction Date: 9/1/2011

Sample Numbers: L533934-06

Analyte	Laboratory Control Sample			Laboratory Control Sample Duplicate			Control Qualifier	Control Limits	Control RPD
	Spike %	LCS %	Rec %	LCSD %	Rec %	Control Limits			
1,2,4-Trichlorobenzene	0.333	0.213	64.0	0.191	57.4	48-87		11	20
2,4,6-Trichlorophenol	0.333	0.234	70.4	0.220	66.1	50-98		6.2	20
2,4-Dichlorophenol	0.333	0.241	72.3	0.224	67.3	56-96		7.1	20
2,4-Dimethylphenol	0.333	0.254	76.3	0.226	67.8	52-101		12	20
2,4-Dinitrophenol	0.333	0.221	66.4	0.220	66.1	10-109		0.4	39
2,4-Dinitrotoluene	0.333	0.218	65.5	0.225	67.5	54-103		3.0	20
2,6-Dinitrotoluene	0.333	0.226	67.8	0.219	65.8	53-99		2.9	20
2-Chloronaphthalene	0.333	0.222	66.7	0.209	62.6	55-96		6.2	20
2-Chlorophenol	0.333	0.229	68.7	0.214	64.3	52-88		6.6	20
2-Nitrophenol	0.333	0.245	73.5	0.218	65.5	55-106		12	20
3,3-Dichlorobenzidine	0.333	0.183	54.8	0.183	54.9	36-84		0.2	20
4,6-Dinitro-2-methylphenol	0.333	0.216	64.7	0.223	67.0	24-98		3.5	32
4-Bromophenyl-phenylether	0.333	0.221	66.4	0.232	69.8	58-111		4.9	20
4-Chloro-3-methylphenol	0.333	0.250	75.1	0.236	70.9	58-98		5.8	20
4-Chlorophenyl-phenylether	0.333	0.220	66.1	0.213	64.0	59-103		3.2	20
4-Nitrophenol	0.333	0.215	64.5	0.217	65.3	34-101		1.3	26
Acenaphthene	0.333	0.222	66.7	0.218	65.5	55-96		1.8	20
Acenaphthylene	0.333	0.239	71.7	0.227	68.1	61-107		5.2	20
Anthracene	0.333	0.235	70.6	0.219	65.8	58-105		7.1	20
Benzidine	0.333	0.0486	14.6	0.0493	14.8	10-21		1.5	40
Benzo(a)anthracene	0.333	0.232	69.6	0.222	66.8	56-103		4.1	20
Benzo(a)pyrene	0.333	0.236	71.0	0.224	67.3	57-103		5.2	20
Benzo(b)fluoranthene	0.333	0.243	72.9	0.215	64.7	52-106		12	20
Benzo(g,h,i)perylene	0.333	0.259	77.7	0.230	69.0	47-112		12	20
Benzo(k)fluoranthene	0.333	0.242	72.6	0.219	65.7	53-104		10	20
Benzylbutyl phthalate	0.333	0.253	75.9	0.238	71.6	61-118		5.9	20
Bis(2-chlorethoxy)methane	0.333	0.239	71.7	0.220	66.0	58-104		8.3	20
Bis(2-chloroethyl)ether	0.333	0.234	70.1	0.225	67.4	51-103		3.9	20
Bis(2-chloroisopropyl)ether	0.333	0.241	72.5	0.223	66.9	56-95		8.0	20
Bis(2-ethylhexyl)phthalate	0.333	0.249	74.9	0.243	72.8	56-120		2.7	20
Chrysene	0.333	0.222	66.5	0.218	65.5	55-102		1.5	20
Dibenz(a,h)anthracene	0.333	0.255	76.5	0.238	71.5	49-111		6.7	20
Diethyl phthalate	0.333	0.225	67.7	0.223	66.8	61-105		1.2	20
Dimethyl phthalate	0.333	0.221	66.2	0.219	65.8	60-106		0.7	20
Di-n-butyl phthalate	0.333	0.230	69.2	0.235	70.5	59-114		1.9	20



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/3/2011 6:07:00 PM

Instrument ID: BNAMS2

Sample Numbers: L533934-06

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553395

Analyst: 377

Extraction Date: 9/1/2011

Analyte	Laboratory Control Sample/ Laboratory Control Sample Duplicate				Control	Control	Qualifier
	Spike	LCS	% Rec	LCSD			
Di-n-octyl phthalate	0.333	0.252	75.8	0.244	73.4	51-119	3.2
Fluoranthene	0.333	0.229	68.9	0.227	68.3	59-108	0.9
Fluorene	0.333	0.217	65.1	0.222	66.6	59-100	2.3
Hexachloro-1,3-butadiene	0.333	0.237	71.1	0.211	63.2	53-106	12
Hexachlorobenzene	0.333	0.218	65.3	0.211	63.3	50-108	3.1
Hexachlorocyclopentadiene	0.333	0.164	49.3	0.168	50.5	36-117	2.5
Hexachloroethane	0.333	0.230	69.2	0.206	61.8	45-83	11
Indeno(1,2,3-cd)pyrene	0.333	0.252	75.8	0.233	70.1	50-110	7.9
Isophorone	0.333	0.208	62.5	0.178	53.5	51-99	15
Naphthalene	0.333	0.234	70.4	0.212	63.7	55-91	9.9
Nitrobenzene	0.333	0.246	73.8	0.214	64.2	47-92	14
n-Nitrosodimethylamine	0.333	0.221	66.4	0.197	59.0	31-107	12
n-Nitrosodi-n-propylamine	0.333	0.250	75.0	0.224	67.3	52-103	11
n-Nitrosodiphenylamine	0.333	0.241	72.3	0.235	70.5	57-121	2.5
Pentachlorophenol	0.333	0.203	61.0	0.190	56.9	10-89	6.9
Phenanthrene	0.333	0.235	70.5	0.221	66.4	55-103	5.9
Phenol	0.333	0.239	71.8	0.224	67.3	49-99	6.4
Pyrene	0.333	0.231	69.3	0.217	65.1	54-104	6.2



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/4/2011 4:36:00 PM Analytic Batch: WG553588

Instrument ID: BNAMS4 Analyst: 377

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26 Extraction Date: 9/3/2011

Analyte	Laboratory Control Sample/				Laboratory Control Sample Duplicate			
	Spike	LCS	% Rec	LCSD	Rec	% Control	RPD	Control Qualifier
1,2,4-Trichlorobenzene	0.333	0.195	58.7	0.218	65.6	48-87	11	20
2,4,6-Trichlorophenol	0.333	0.229	68.9	0.254	76.3	50-98	10	20
2,4-Dichlorophenol	0.333	0.226	67.8	0.236	70.9	56-96	4.5	20
2,4-Dimethylphenol	0.333	0.224	67.2	0.232	69.6	52-101	3.5	20
2,4-Dinitrophenol	0.333	0.205	61.7	0.230	69.1	10-109	11	39
2,4-Dinitrotoluene	0.333	0.230	69.0	0.251	75.5	54-103	9.1	20
2,6-Dinitrotoluene	0.333	0.223	66.9	0.248	74.6	53-99	11	20
2-Chloronaphthalene	0.333	0.202	60.5	0.224	67.2	55-96	10	20
2-Chlorophenol	0.333	0.203	60.9	0.206	61.8	52-88	1.5	20
2-Nitrophenol	0.333	0.212	63.6	0.238	71.5	55-106	12	20
3,3-Dichlorobenzidine	0.333	0.207	62.3	0.224	67.4	36-84	7.9	20
4,6-Dinitro-2-methylphenol	0.333	0.234	70.2	0.241	72.4	24-98	3.1	32
4-Bromophenyl-phenylether	0.333	0.232	69.6	0.253	75.9	58-111	8.7	20
4-Chloro-3-methylphenol	0.333	0.215	64.6	0.229	68.7	58-98	6.2	20
4-Chlorophenyl-phenylether	0.333	0.217	65.1	0.234	70.4	59-103	7.7	20
4-Nitrophenol	0.333	0.173	52.0	0.215	64.7	34-101	22	26
Acenaphthene	0.333	0.225	67.5	0.240	72.0	55-96	6.3	20
Acenaphthylene	0.333	0.232	69.6	0.241	72.4	61-107	4.0	20
Anthracene	0.333	0.217	65.2	0.243	73.0	58-105	11	20
Benzidine	0.333	0.0373	11.2	0.0430	12.9	10-21	14	40
Benzo(a)anthracene	0.333	0.233	69.8	0.248	74.5	56-103	6.5	20
Benzo(a)pyrene	0.333	0.226	68.0	0.237	71.1	57-103	4.5	20
Benzo(b)fluoranthene	0.333	0.221	66.4	0.227	68.3	52-106	2.7	20
Benzo(g,h,i)perylene	0.333	0.233	70.0	0.245	73.4	47-112	4.8	20
Benzo(k)fluoranthene	0.333	0.230	69.2	0.252	75.8	53-104	9.1	20
Benzylbutyl phthalate	0.333	0.217	65.1	0.228	68.4	61-118	5.0	20
Bis(2-chlorethoxy)methane	0.333	0.203	60.8	0.221	66.5	58-104	8.8	20
Bis(2-chloroethyl)ether	0.333	0.194	58.4	0.197	59.2	51-103	1.4	20
Bis(2-chloroisopropyl)ether	0.333	0.213	63.9	0.196	58.9	56-95	8.3	20
Bis(2-ethylhexyl)phthalate	0.333	0.220	66.1	0.237	71.3	56-120	7.5	20
Chrysene	0.333	0.235	70.6	0.244	73.2	55-102	3.6	20
Dibenz(a,h)anthracene	0.333	0.222	66.6	0.232	69.7	49-111	4.5	20
Diethyl phthalate	0.333	0.224	67.3	0.245	73.5	61-105	8.8	20
Dimethyl phthalate	0.333	0.231	69.5	0.236	70.9	60-106	2.0	20
Di-n-butyl phthalate	0.333	0.228	68.4	0.243	73.1	59-114	6.7	20



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-volatile Organic Compounds by Method 8270C

Project No: Project: EnCana Pavillion W7 Matrix: Soil - mg/kg

Collection Date: 8/29/2011 EPA ID: TN00003

Analysis Date: 9/4/2011 4:36:00 PM Analytic Batch: WG553588

Instrument ID: BNAMS4 Analyst: 377

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26 Extraction Date: 9/3/2011

Analyte	Laboratory Control Sample/			Laboratory Control Sample Duplicate			Control Qualifier	Control Limits	Control RPD
	Spike	LCS	% Rec	LCSD	% Rec	Control Limits			
Di-n-octyl phthalate	0.333	0.221	66.4	0.239	71.6	51-119		7.6	22
Fluoranthene	0.333	0.241	72.5	0.246	73.8	59-108		1.8	20
Fluorene	0.333	0.214	64.3	0.237	71.1	59-100		10	20
Hexachloro-1,3-butadiene	0.333	0.232	69.6	0.244	73.2	53-106		5.0	20
Hexachlorobenzene	0.333	0.221	66.3	0.239	71.7	50-108		7.8	20
Hexachlorocyclopentadiene	0.333	0.153	45.8	0.170	51.1	36-117		11	20
Hexachloroethane	0.333	0.204	61.2	0.201	60.3	45-83		1.5	20
Indeno(1,2,3-cd)pyrene	0.333	0.225	67.7	0.239	71.7	50-110		5.8	20
Isophorone	0.333	0.159	47.8	0.187	56.2	51-99	J4	16	20
Naphthalene	0.333	0.204	61.3	0.219	65.7	55-91		6.9	20
Nitrobenzene	0.333	0.210	63.1	0.227	68.1	47-92		7.6	20
n-Nitrosodimethylamine	0.333	0.189	56.8	0.201	60.4	31-107		6.2	23
n-Nitrosodi-n-propylamine	0.333	0.203	60.9	0.199	59.7	52-103		2.0	20
n-Nitrosodiphenylamine	0.333	0.206	61.8	0.222	66.5	57-121		7.3	20
Pentachlorophenol	0.333	0.210	63.0	0.228	68.5	10-89		8.4	28
Phenanthrene	0.333	0.218	65.4	0.236	70.9	55-103		8.1	20
Phenol	0.333	0.189	56.9	0.194	58.2	49-99		2.3	20
Pyrene	0.333	0.212	63.7	0.230	69.2	54-104		8.3	20



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/3/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-06

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553395

Analyst: 377

Extraction Date: 9/1/2011

Internal Standard Response and Retention Time Summary

FileID:0903_02.D

Date:9/3/2011

Time:7:16 AM

	IS1 Response	IS1 RT	IS2 Response	IS2 RT	IS3 Response	IS3 RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	49323	5.16	198020	5.91	108486	6.93
Upper Limit	98646	5.66	396040	6.41	216972	7.43
Lower Limit	24661.5	4.66	99010	5.41	54243	6.43
Blank WG553395	45351	5.16	173484	5.91	91519	6.93
L533934-06	49644	5.16	213957	5.91	144451	6.94
LCS WG553395	57004	5.16	212434	5.91	127318	6.93
LCSD WG553395	55969	5.17	213364	5.91	119031	6.93
MS WG553395	46128	5.16	173630	5.91	97298	6.93
MSD WG553395	41190	5.16	161713	5.91	91394	6.94



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/3/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-06

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553395

Analyst: 377

Extraction Date: 9/1/2011

Internal Standard Response and Retention Time Summary

FileID:0903_02.D

Date:9/3/2011

Time:7:16 AM

	IS4 Response	IS4 RT	IS5 Response	IS5 RT	IS6 Response	IS6 RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	183992	7.81	152902	9.75	144452	11.84
Upper Limit	367984	8.31	305804	10.25	288904	12.34
Lower Limit	91996	7.31	76451	9.25	72226	11.34
Blank WG553395	155047	7.81	123147	9.75	125527	11.83
L533934-06	237363	7.83	138217	9.76	56392	11.85 *
LCS WG553395	212481	7.81	178011	9.75	159122	11.84
LCSD WG553395	197478	7.81	172080	9.75	159111	11.84
MS WG553395	162320	7.81	135399	9.75	118757	11.83
MSD WG553395	152389	7.81	124761	9.75	106956	11.84



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: BNAMS4

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553588

Analyst: 377

Extraction Date: 9/3/2011

Internal Standard Response and Retention Time Summary

FileID:0904_02.D

Date:9/4/2011

Time:7:47 AM

	IS1 Response	IS1 RT	IS2 Response	IS2 RT	IS3 Response	IS3 RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	63960	5.13	245622	5.88	138378	6.92
Upper Limit	127920	5.63	491244	6.38	276756	7.42
Lower Limit	31980	4.63	122811	5.38	69189	6.42
Blank WG553588	61076	5.13	236204	5.88	126197	6.91
L533934-01	81147	5.14	396563	5.89	110348	6.92
L533934-02	50788	5.14	223126	5.89	98397	6.92
L533934-04	47551	5.14	195817	5.88	90841	6.92
L533934-15	43667	5.13	166143	5.88	96235	6.91
LCS WG553588	59044	5.13	232391	5.88	130755	6.91
LCSD WG553588	62238	5.13	229013	5.88	130996	6.92



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: BNAMS4

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553588

Analyst: 377

Extraction Date: 9/3/2011

Internal Standard Response and Retention Time Summary

FileID:0904_02.D

Date:9/4/2011

Time:7:47 AM

	IS4 Response	IS4 RT	IS5 Response	IS5 RT	IS6 Response	IS6 RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	259290	7.79	254073	9.75	242100	11.86
Upper Limit	518580	8.29	508146	10.25	484200	12.36
Lower Limit	129645	7.29	127036.5	9.25	121050	11.36
Blank WG553588	240956	7.79	221608	9.74	214463	11.86
L533934-01	178769	7.80	158752	9.75	151308	11.87
L533934-02	172408	7.79	161022	9.74	158078	11.86
L533934-04	161679	7.79	149720	9.74	150924	11.85
L533934-15	165071	7.79	158906	9.74	156655	11.85
LCS WG553588	231604	7.79	221886	9.74	219313	11.86
LCSD WG553588	238201	7.79	227429	9.75	227559	11.86



12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553588

Analysis Date: 9/4/2011

Analyst: 377

Instrument ID: BNAMS10

Extraction Date: 9/3/2011

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Internal Standard Response and Retention Time Summary

FileID:0905_02.D

Date:9/5/2011

Time:9:33 AM

	IS1 Response	IS1 RT	IS2 Response	IS2 RT	IS3 Response	IS3 RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	109655	4.88	367004	5.62	213313	6.63
Upper Limit	219310	5.38	734008	6.12	426626	7.13
Lower Limit	54827.5	4.38	183502	5.12	106656.5	6.13
L533934-03	890153	4.98	*1549200	5.63	*347587	6.64
L533934-25	125880	4.89	467612	5.62	185278	6.64



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Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553588

Analysis Date: 9/4/2011

Analyst: 377

Instrument ID: BNAMS10

Extraction Date: 9/3/2011

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Internal Standard Response and Retention Time Summary

FileID:0905_02.D

Date:9/5/2011

Time:9:33 AM

	IS4 Response	RT	IS5 Response	RT	IS6 Response	RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	409554	7.5	426497	9.26	407141	11.06
Upper Limit	819108	8	852994	9.76	814282	11.56
Lower Limit	204777	7	213248.5	8.76	203570.5	10.56
L533934-03	483912	7.51	348134	9.26	377356	11.06
L533934-25	367792	7.50	359994	9.26	223793	11.06



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Est. 1970

Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Matrix: Soil - mg/kg

Project: EnCana Pavillion W7

EPA ID: TN00003

Collection Date: 8/29/2011

Analytic Batch: WG553588

Analysis Date: 9/4/2011

Analyst: 377

Instrument ID: BNAMS2

Extraction Date: 9/3/2011

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Internal Standard Response and Retention Time Summary

FileID:0906_02.D

Date:9/6/2011

Time:5:04 PM

	IS1 Response	RT	IS2 Response	RT	IS3 Response	RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	55393	5.16	205315	5.91	115915	6.93
Upper Limit	110786	5.66	410630	6.41	231830	7.43
Lower Limit	27696.5	4.66	102657.5	5.41	57957.5	6.43
L533934-03	52410	5.16	176068	5.91	98147	6.93
L533934-26	50897	5.17	195125	5.91	103904	6.93



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Tax I.D 62-0814289
Est. 1970

Quality Control Summary

SDG: L533934

AECOM Inc. - Fort Collins, CO

Test: Semi-Volatiles by Method 8270C

Project No:

Project: EnCana Pavillion W7

Collection Date: 8/29/2011

Analysis Date: 9/4/2011

Instrument ID: BNAMS2

Sample Numbers: L533934-01, -02, -03, -04, -15, -25, -26

Matrix: Soil - mg/kg

EPA ID: TN00003

Analytic Batch: WG553588

Analyst: 377

Extraction Date: 9/3/2011

Internal Standard Response and Retention Time Summary

FileID:0906_02.D

Date:9/6/2011

Time:5:04 PM

	IS4 Response	IS4 RT	IS5 Response	IS5 RT	IS6 Response	IS6 RT
Sample ID	Response	RT	Response	RT	Response	RT
12 Hour Std	193434	7.81	157499	9.75	150235	11.83
Upper Limit	386868	8.31	314998	10.25	300470	12.33
Lower Limit	96717	7.31	78749.5	9.25	75117.5	11.33
L533934-03	169633	7.81	137952	9.74	132345	11.83
L533934-26	164432	7.81	140685	9.74	137650	11.83

E174

Chain of Custody
Page 1 of 3

Company Name/Address
AECOM
1601 Prospect Parkway
Fort Collins, CO 80525

Alternate Billing		Analysis/Container/Preservative			
Report to: Dustin Krajewski					
E-mail to: dustin.krajewski @aecom.com					

Project Description: **Encana Pavilion W7**

PHONE: (970)493-8878 Client Project No.

FAX: (970)493-0213

Collected by: **Jeremy Hunsaker**

Collected by (signature): **J.H.**

Packed on Ice N **Y** X

Rush? (Lab MUST be Notified)	Date Results Needed	No of Conts
<input type="checkbox"/> Same Day.....200%		
<input type="checkbox"/> Next Day.....100%		
<input type="checkbox"/> Two Day.....50%	Email? No Yes	
	FAX? No Yes	

Sample ID	Comp/Grab	Matrix	Depth	Date	Time	TPH	Geo + DPO	SOC	BTX	SAR	Remarks/contaminant	Sample # (lab only)
SB-3-11(TP-24-3)(7-8)	Grab	SS	7-8	8/09/11	12:15	3	X	X			████████	L533934-01
→ SB-4-11(TP-24-3)(7-8)			7-8		12:20	3	X	X			72 hr turn	-02
SB-5-11(TP-24-3)(7-8)			7-8		12:25	3	X	X			on TP-22-12 and	-03
SB-6-11(TP-24-3)(6-8)			6-8		12:30	3	X	X			TP-14-12 samples	-04
SB-1-11(TP-22-12)(10-12)			10-12		13:40	1	X					-05
→ SB-1-11(TP-22-12)(7-8)			7-8		15:05	2	X	X				-06
SB-4-11(TP-22-12)(10-12)			10-12		14:00	1	X					-07
SB-2-11(TP-22-12)(11-12)	↓	↓	11-12		14:15	1	X					-08
SB-3-11(TP-22-12)(12-13)	↓	↓	12-13	↓	14:35	1	X					-09

Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT- Other _____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquisher by (Signature) J.H.	Date: 8/31/11	Time: 1630	Received by (Signature) John	Samples returned via: FedEx <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Other 496345514691	Condition: Cold	(lab use only) OK
Relinquisher by (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.4° Bottles Received: 4/5 402		
Relinquisher by (Signature)	Date:	Time:	Received for lab by: (Signature) Chris Wilson	Date: 9/1/11 Time: 0900	pH Checked: NCF:	113 of 115

Company Name/Address AECOM 1601 Prospect Parkway Fort Collins, CO 80525				Alternate Billing				Analysis/Container/Preservative				Chain of Custody Page <u>2</u> of <u>3</u>	
												Prepared by: ENVIRONMENTAL SCIENCE CORP 12065 Lebanon Road Mt. Juliet TN 37122 Phone (615) 758-5858 Phone (800) 767-5859 FAX (615) 758-5859	
				Report to: Dustin Trajewski E-mail to: dustin.trajewski@aecom.com									
Project Description: Encana Pavilion W7													
PHONE: (970)493-8878	Client Project No.			Lab Project #									
FAX: (970)493-0213													
Collected by: <i>Jerry Hershner</i>	Site/Facility ID#			P.O.#									
Collected by (signature): <i>Jerry Hershner</i>	Rush? (Lab MUST be Notified)			Date Results Needed			No of Cntrs						
Packed on Ice N <u>Y</u> <u>L</u>	<input type="checkbox"/> Same Day.....200%			Email? <u>No</u> Yes									
	<input type="checkbox"/> Next Day.....100%			FAX? <u>No</u> Yes									
	<input type="checkbox"/> Two Day.....50%												
Sample ID	Comp/Grab	Matrix	Depth	Date	Time		TPH - 600+ DPs	Soil + (8071)	BTEX (8022)	SAR		CoCode (lab use only)	
SB-5-11(TP-22-12)(0-12)	Grab	SS	10-12	8/21/11	1500	1	X					Template/Prelogin	
SB-1-11(TP-31-9)(0-1)			0-1		16:20	1		X				Shipped Via: Denver Service Center	
SB-1-11(TP-31-9)(14-15)			14-15		16:15	1	X						
SB-2-11(TP-31-9)(0-1)			0-1		16:45	1		X					
SB-2-11(TP-31-9)(14-15)			14-14		16:40	1	X						
SB-2-11(TP-31-9)(6-8)			6-8		17:10	1	X						
SB-3-11(TP-31-9)(0-1)			0-1		17:07	1		X					
SB-3-11(TP-31-9)(13-15)	▼	▼	13-15	▼	17:05	1	X						
Trip blank	▼	▼	—		0800								

Matrix: SS-Soil/Solid GW-Groundwater WW-Wastewater DW-Drinking Water OT-Other _____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquisher by (Signature) <i>Jerry Hershner</i>	Date: 07/11	Time: 1630	Received by: (Signature) <i>Index</i>	Samples returned via: FedEx <input checked="" type="checkbox"/> UPS <input type="checkbox"/> Other _____		Condition (lab use only) <i>OK</i>
Relinquisher by (Signature)	Date:	Time:	Received by: (Signature)	Temp: <u>34°</u> Bottles Received: <u>45-502</u>		<i>ccess</i>
Relinquisher by (Signature)	Date:	Time:	Received for lab by: (Signature) <i>Karen Weier</i>	Date: 9/1/11	Time: 0900	pH Checked: NCF: 114 of 115

Matrix: SS-Soil/Sediment GW-Groundwater WW-Wastewater DW-Drinking water OT-Other

Flow Other

Remarks:

Relinquisher by:(Signature) 	Date: 8/31/11	Time: 1630	Received by:(Signature) Index		Samples returned via: FedEX UPS Other	Condition	(Lab use only)
Relinquisher by:(Signature) 	Date:	Time:	Received by: (Signature)		Temp: 34.4°C	Bottles Received: 45402	COC CS! OK
Relinquisher by:(Signature) 	Date:	Time:	Received for lab by: (Signature) Kenny - 130002-2		Date: 9/1/11	Time: 0900	pH Checked: NCF: